

40p

Printout No 8

Fortnightly September 29 — October 12 1983

LOAD RUNNER

THE GALAXY'S FIRST COMPUTER COMIC

LOAD RUNNER AND **PETRA** ARE TWO HUMANS STRANDED IN A MALEVOLENT COMPUTER-CONTROLLED **GAME WORLD**. TAKING TO THE AIR IN AN OLD BI-PLANE, THEY FIND THEMSELVES IN A **DOG FIGHT!**

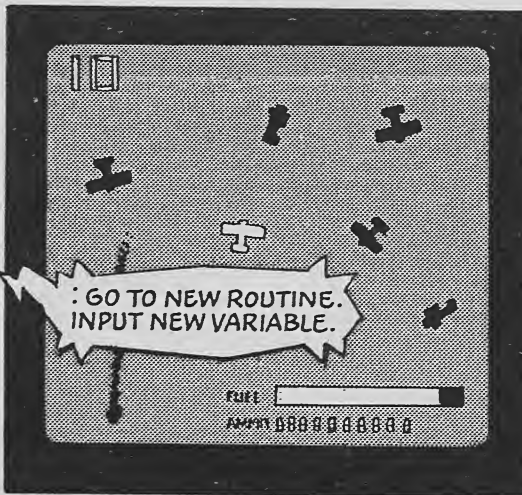
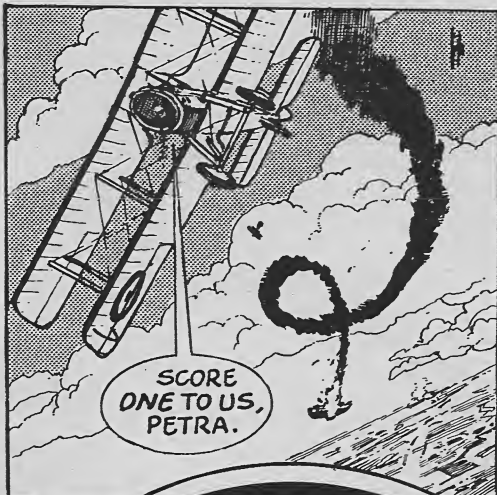


**JOIN
THE DECODERS**

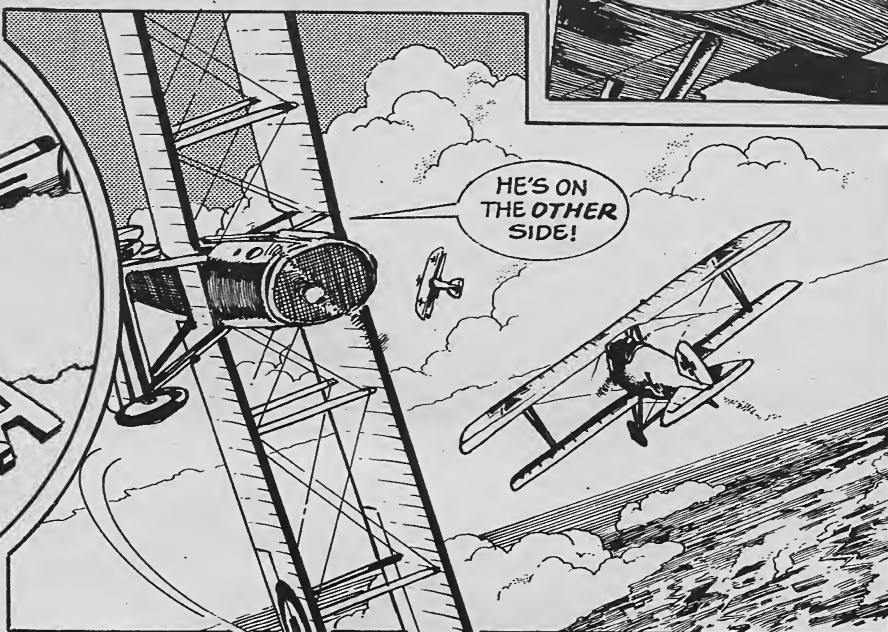
**ROM AND RAM
AT THE FAIR**

**MOTOR RACING
MICRO USER**

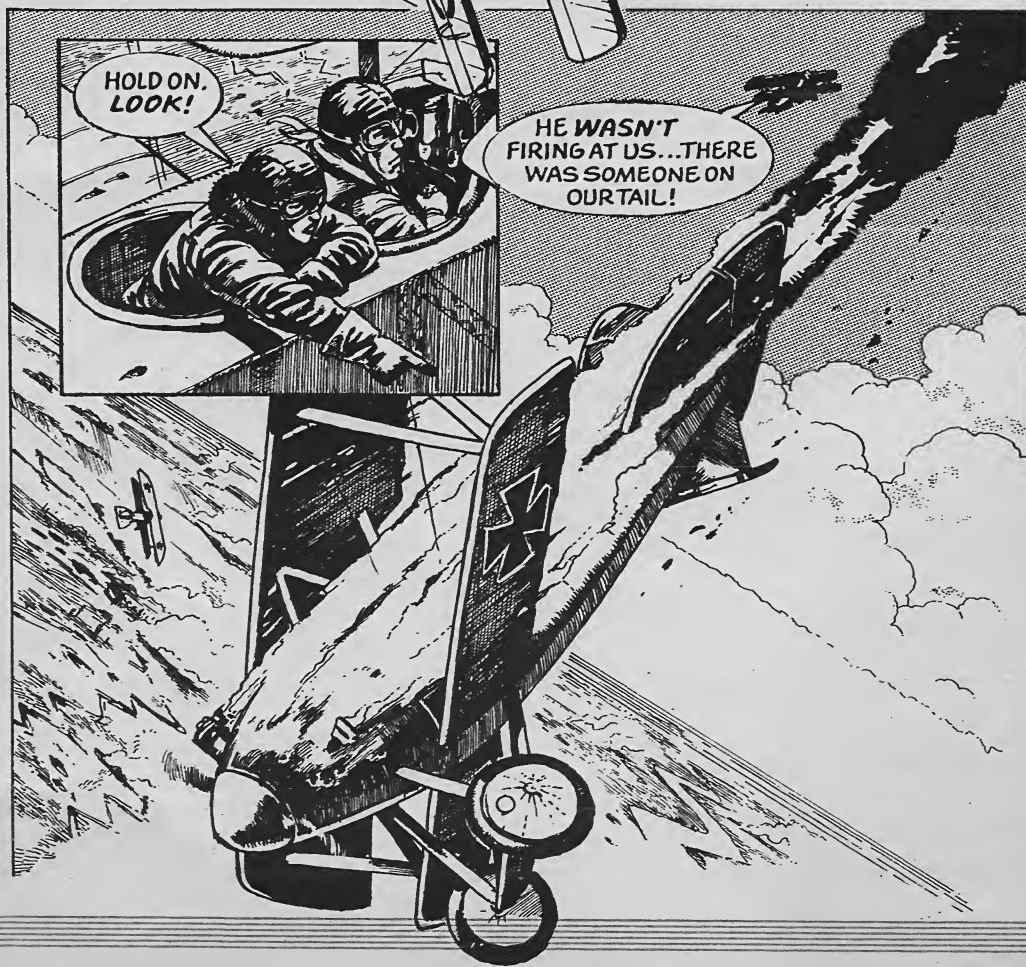


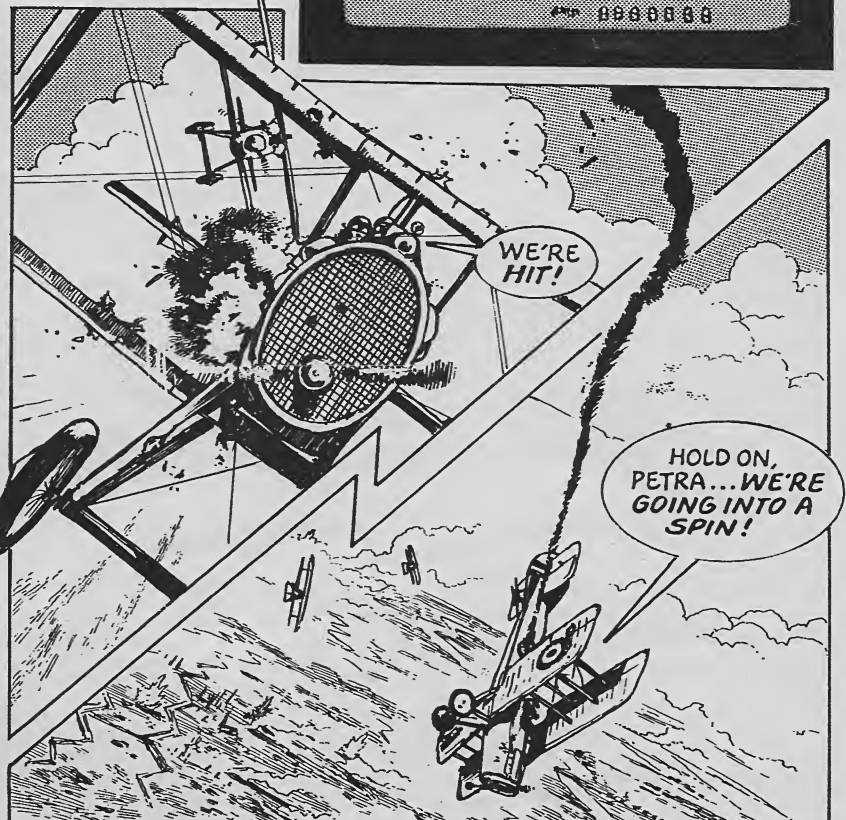
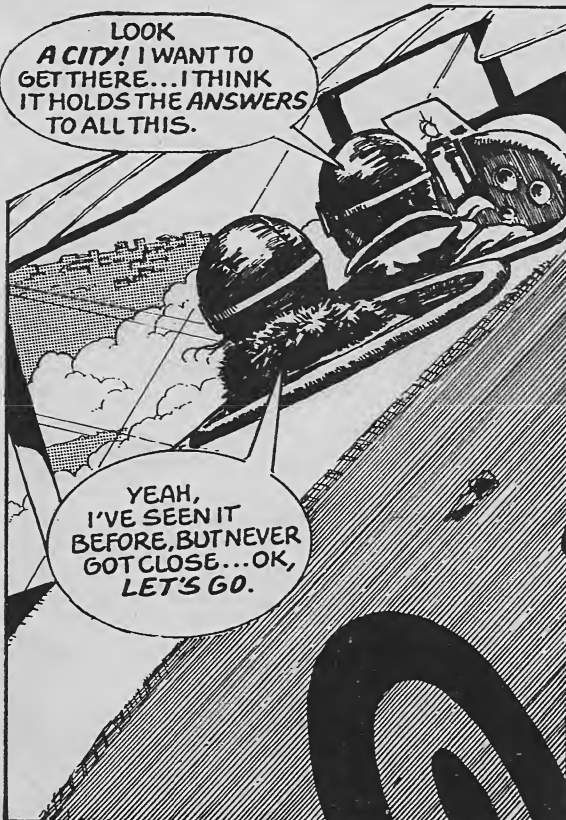
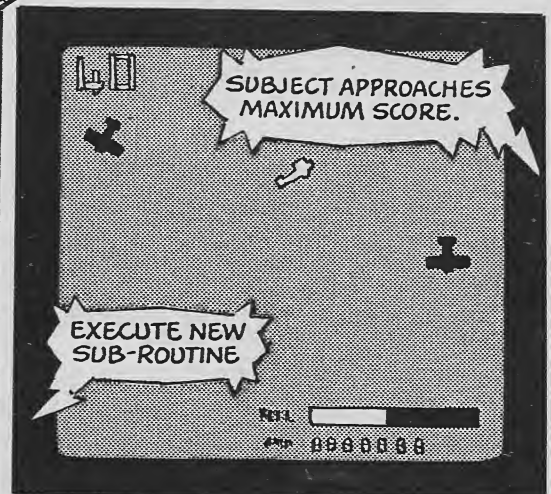
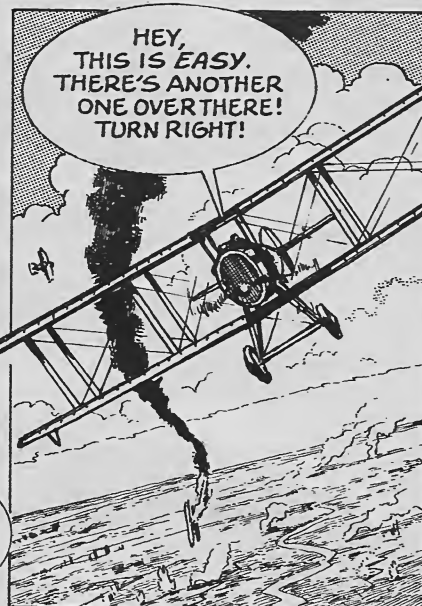
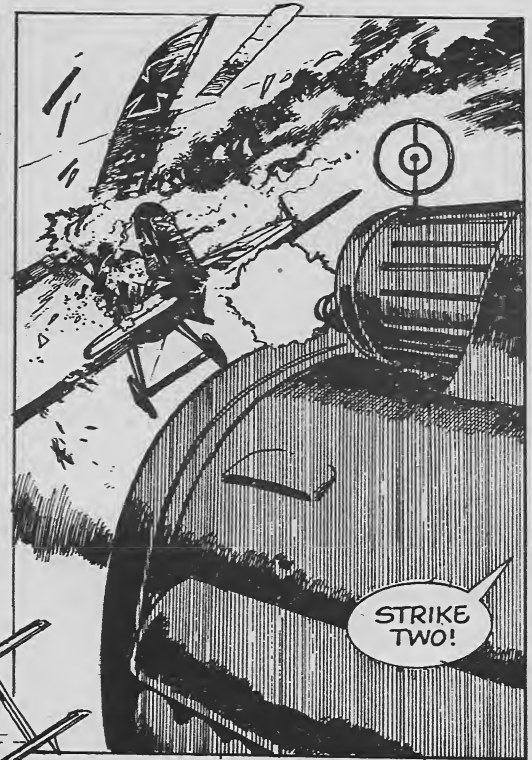


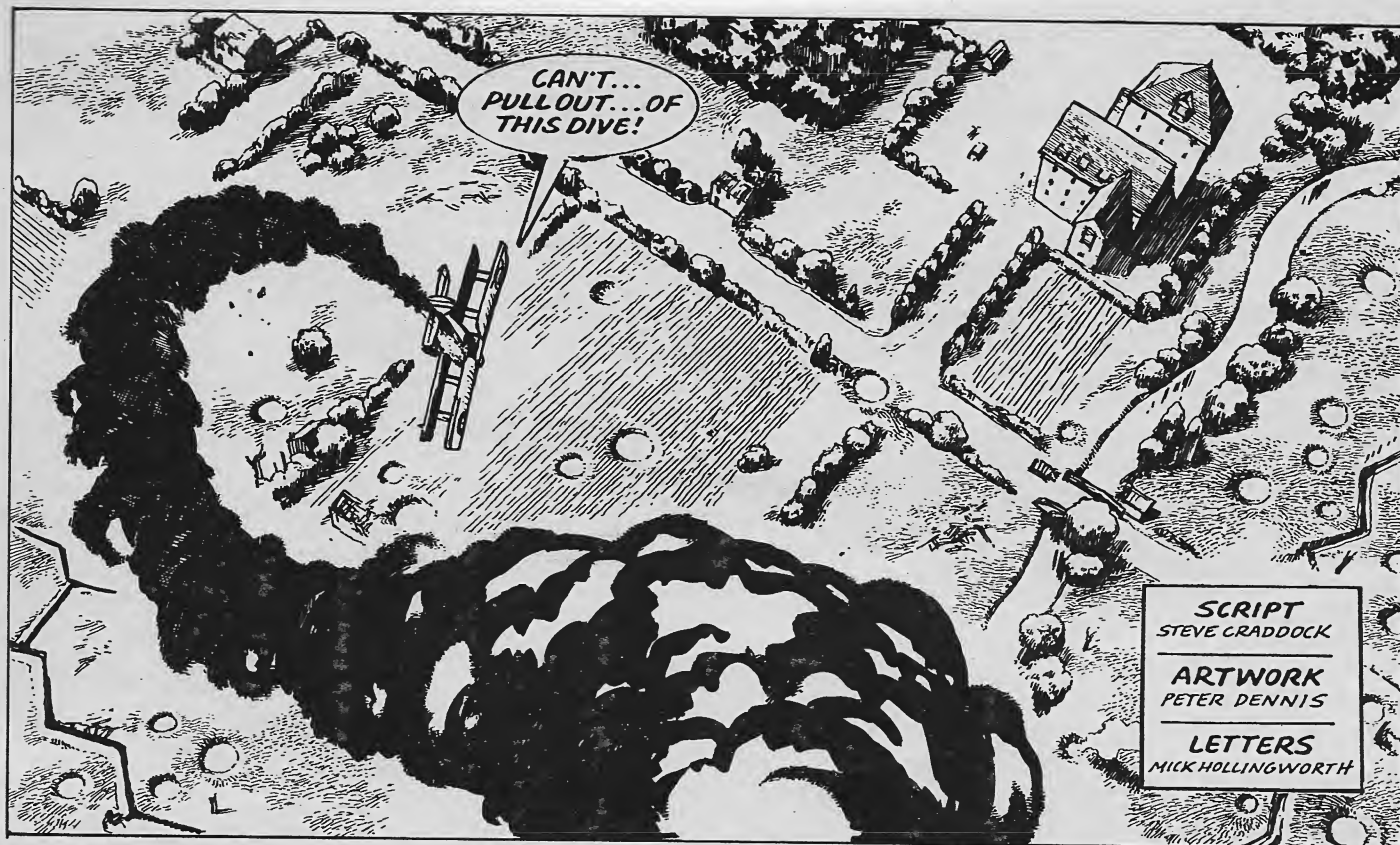
LOAD RUNNER'S ENIGMATIC
OPPONENT FROM THE
TERRIFYING CHESS GAME*...
BUT WHICH SIDE IS HE ON?



* AS DISPLAYED IN PRINTOUTS 3 AND 4.



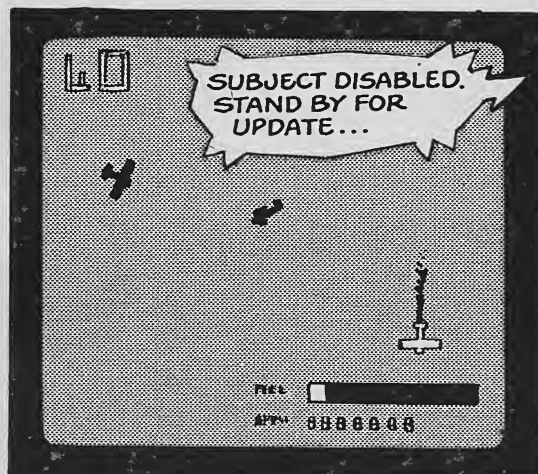




SCRIPT
STEVE CRADDOCK

ARTWORK
PETER DENNIS

LETTERS
MICK HOLLINGWORTH



WELL,
AT LEAST IT
MIGHT BREAK
OUR...



AND IN THE SILENCE,
SOMETHING MOVED...

NEXT PRINTOUT = COME INTO MY PARLOUR!

SCHOOL FOR SOFTWARE

AFTER A SCHOOL SOFTWARE COMPETITION IS ANNOUNCED TO DEVELOP THE BEST GAME PROGRAM, REBEL PUPIL BEV JEAVONS HITS ON A WINNING IDEA. BUT OTHER PEOPLE ARE OUT TO STOP HER

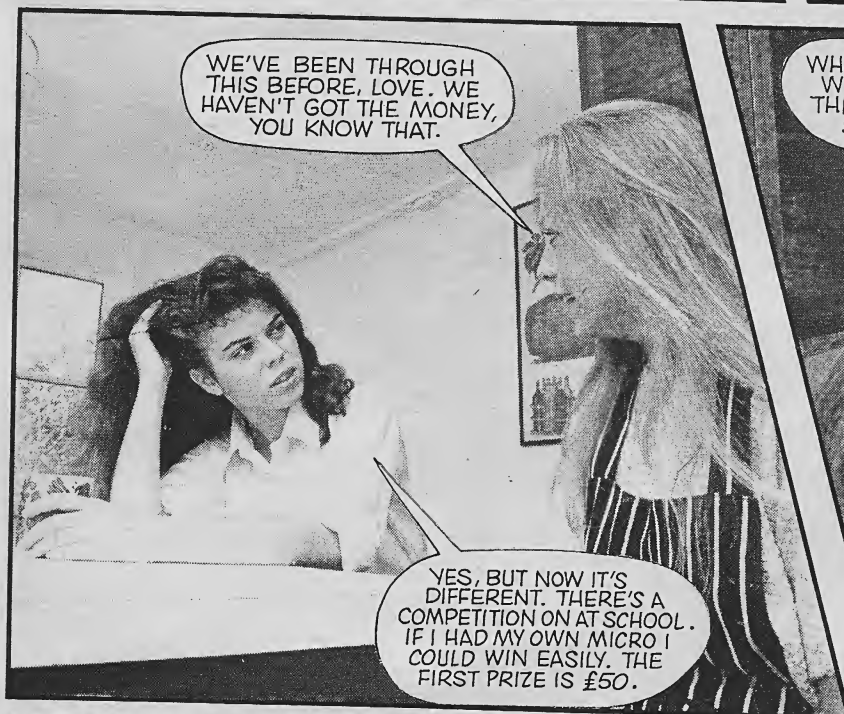


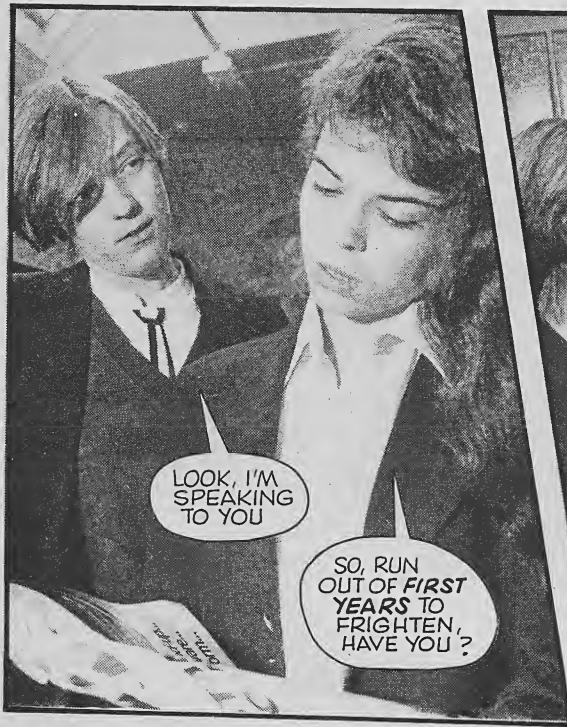
SCRIPT:
FRANK HOPKINSON

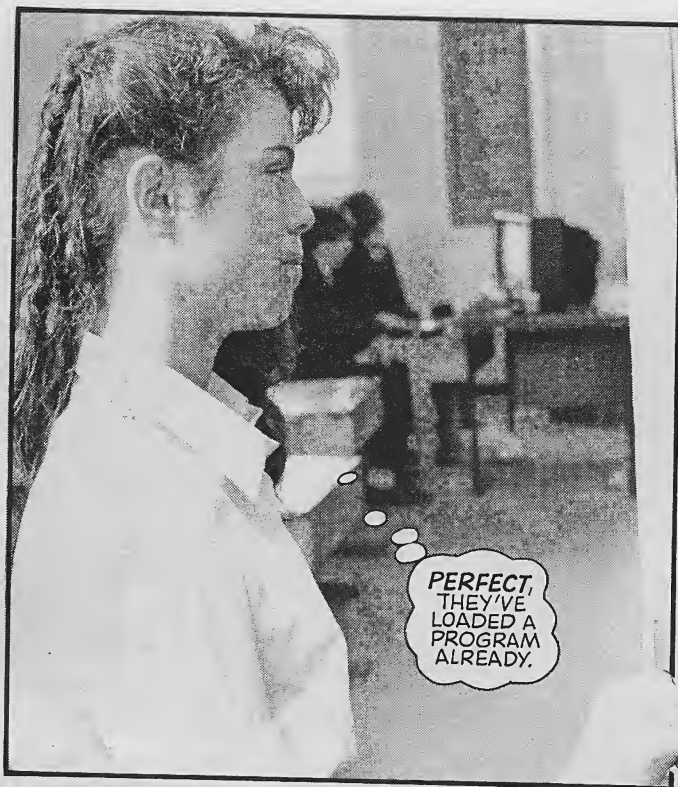
PHOTOS:
HENRY ARDEN

LETTERS:
JACK POTTER









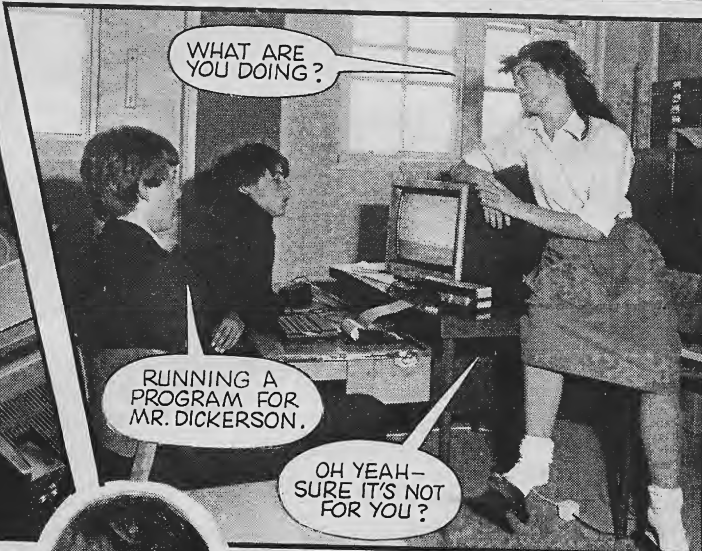
PERFECT, THEY'VE LOADED A PROGRAM ALREADY.



SEEN MY NOTEBOOK, HAVE YOU? I THOUGHT I LEFT IT HERE.



THAT'S FUNNY. THEY HAVEN'T SAID ANYTHING. IF I WAS THEM I'D BE VERY NERVOUS ABOUT LOSING MY PROGRAM DUE TO ANOTHER SUDDEN RAM CRASH.



WHAT ARE YOU DOING?

RUNNING A PROGRAM FOR MR. DICKERSON.

OH YEAH—SURE IT'S NOT FOR YOU?



YOU DON'T WANT THIS GROTTY PRINT-OUT, DO YOU?

YOU CAN'T DO THAT!



TOUGH LUCK! AND THAT'S GOOD-BYE TO YOUR PROGRAM. SEE HOW YOU LIKE IT, CREEP!



WHAT ARE YOU DOING, JEAVONS?

CONTINUED NEXT PRINTOUT.

CHILDREN'S EDUCATIONAL SOFTWARE

The MICRO MASTER Series for 7-13 years (any SPECTRUM)

RESEARCHED, DESIGNED AND TESTED by teachers with just one aim TEACHING. Easy to use — just RUN.

THE FOUR RULES OF NUMBER

(A package of 5 programmes)

This package promotes FAST and ACCURATE calculation ability at increasingly difficult levels. It is very EFFECTIVE as can be seen by consulting the enclosed grading tables for assessments of pupil's performance (given his age).

LANGUAGE DEVELOPMENT SERIES

(10 programmes on each cassette)

To develop VOCABULARY, SPELLING, CONCEPT ATTAINMENT, VERBAL REASONING and KNOWLEDGE OF THE ENGLISH LANGUAGE.

A complete series tailored to each age group. Used for remediation and, at the highest levels, for COMMON ENTRANCE etc.

THE FOUR RULES PACKAGE £11.70
LANGUAGE DEVELOPMENT CASSETTE £7.90
(State pupil's age.) 1 of each £14.50

Cheques to MICRO MASTER, Dept. LR, 94 Airedale Ave, Chiswick, London W4 2NN. For further details phone Dr. K. W. Glasson 01-747 1373.

EXPERIENCED SINCLAIR/COMMODORE PROGRAMMERS
REQUIRED IN WEST LONDON

TERMINAL SOFTWARE

PINBALL WIZARD has bumpers, rollovers, a jackpot, slingshots and 3 flippers that you can even use to trap and hold the ball! You can even nudge the table but not too often or it tilts! PINBALL WIZARD IS PURE ENJOYMENT.

UNEXPANDED
VIC 20

New
PINBALL
WIZARD

REALISTIC
GRAVITY!

Rec. Price £7.95

"An excellent game" said Computer and Video Games (Sep '83).

Commodore 64
SUPER SKRAMBLE!

A novel, exciting and compulsively tactical arcade-style game.

Commodore 64
SUPER GRIDDER

The FIRST 64 games cassette to have SIMULTANEOUS TWO-PLAYER ACTION—realistic sound effects too.

New Commodore 64
SUPER DOGFIGHT
Rec. Prices £9.95

SPACE ISLAND and VAMPIRE VILLAGE are unique and exciting replayable real-time graphic adventures — guaranteed to keep you on your toes. CITY is what we call a real-time computerised better-than-a-board game...find out why.

Sinclair
Spectrum 48k

SPACE ISLAND
VAMPIRE VILLAGE
CITY

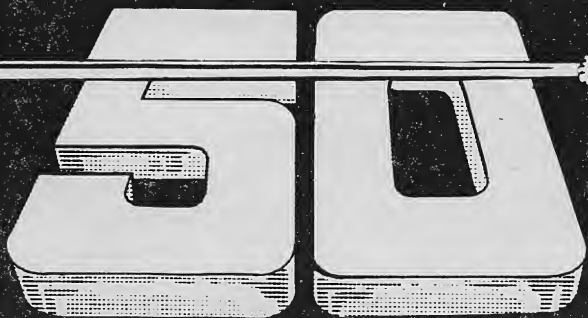
All superb value at **Rec. Price £6.95**

SELECTED TITLES NOW AVAILABLE IN:

Dixons Software Express
GREENCHIP at Debenhams
LASKYS



OUT-OF-THIS-WORLD OFFER..



CASSETTE 50
for your MICRO

• SPECTRUM • ORIC-1 •
• ZX81 • DRAGON • ATARI •
• VIC-20 • Apple ON DISC & CASSETTE

**ORDER
NOW!**

GALACTIC ATTACK
SPACE MISSION
LUNAR LANDER
PLASMA BOLT
STAR TREK
RADAR LANDING
ATTACKER
GALACTIC DOGFIGHT
ZION ATTACK
INVASIVE ACTION
OXO
BOGGLES
PONTOON
SKI JUMP
HANGMAN
OLD BONES
THIN ICE

MAZE EATER
ORBITTER
MOTORWAY
FORCE FIELD
NIM
TUNNEL ESCAPE
BARREL JUMP
CANNONBALL BATTLE
OVERTAKE
SITTING TARGET
SMASH THE WINDOWS
SPACE SHIP
JET FLIGHT
PHASER
INTRUDER
INFERNO
GHOSTS

SUBMARINES
ROCKET LAUNCH
PLANETS
BLACK HOLE
DYNAMITE
DO YOUR SUMS
DERBY DASH
SPACE SEARCH
UNIVERSE
RATS
TANKER
PARACHUTE
JETMOBILE
HIGH RISE
THE FORCE
EXCHANGE

**CASCADE
SOFTWARE**

CASCADES HOUSE
LLANDOGO
MONMOUTH
GWENT
S.WALES NP5 4PA

I ENCLOSE CHEQUE P.O. FOR £9.95 (WHICH INCLUDES VAT AND DELIVERY).

PLEASE SEND ME 50 GAMES ON A CASSETTE FOR MY _____ COMPUTER.

NAME _____

ADDRESS _____

PARENT/GUARDIAN SIGNATURE _____

LR 29.9.83

WE BUY GAMES CONTACT US NOW

Load Runner T-shirts for lucky Decoders

ONCE AGAIN three exclusive *Load Runner* T-shirts are waiting to be claimed by the Decoders whose membership numbers are listed in the coded printout below. To discover whether you are one of the lucky ones, decode the message using your Cipher Book. The message also contains an easy question. If your number is included, claim your prize by writing your name, address and membership number on a postcard, together with the answer to the question, and post it to me at my installation base, to arrive not later than October 14th. Don't forget to state whether you require a small, medium or large size T-shirt. The prize-winners will have their photographs displayed on this page in future printouts.



DECODERS

REB FSLDX GBGIBPQ KPB:
JHB JHB QAW YAUB.
JHB ZBPJ BATER YJSP.
JHB RVJ YAUB ZBPJ.
VEJ LJGBQ YPJG REB MFKHBR ZAFFXDJH?

(Keyword No. 4)



Join
the
Club

THE *LOAD RUNNER* *DECODERS* is a rapidly growing fan club for readers of the first computer comic in the galaxy. A new member will receive a personalised security pass with his or her photograph mounted upon it, together with a membership number. This Security Pass will give the bearer a reduced admission charge to exhibitions and computer fairs announced from time to time in the Decoders page of *Load Runner*.

Each member will also receive the Decoders Cipher Book which provides the key to the coded messages that appear in each printout. Exciting prizes are awarded to successful Decoders whose membership numbers appear in those messages.

The cost of membership is £3. If, however, you cut out the word Decoders from the top of this page and from one other printout of *Load Runner*, you can join the club at the special reduced rate of £1. Simply fill in the application form below and send it together with your membership fee and TWO passport-size photographs to: The Controller, *Load Runner* Decoders, ECC Publications, 196-200 Balls Pond Road, London N1 4AQ. Please make cheques or postal orders payable to ECC Publications Ltd.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

★ Star Letter ★

★ ARE YOU a Decoder with a differ- ★
★ ence? Do you have an interesting ★
★ hobby or an unusual use for your ★
★ computer? Has something out-of-the- ★
★ ordinary ever happened to you? ★
★ Write and tell me about it, including a ★
★ photograph if possible. £5 will be ★
★ paid for each Star Letter published. ★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

War Games Book Winners

Graham Skipworth, Sheffield; John Conway, Preston, Lancs; Jill Roberts, Newbury, Berks; H. C. Armstrong, East Croydon; Sheikh Rahman, London SE19; Lynton Malpas, Tewkesbury, Glos; Carlo Iacono, Watford, Herts; Robert Crompton, Devizes, Wilts; Rowland Turner, Chertsey, Surrey; Robert Barnes, East Hanninfield, Essex; Andrew McGowan, Bearsden, Glasgow; Jonathan Yearsley, Rhyl, Clwyd; Trevnal Lacy, Farnborough, Hants; Brian H. Longstaff, Sheffield; T. Halton, Nantwich, Cheshire; Andrew McGovern, Townhead, Coatbridge; T. A. Willis, Bolney, W. Sussex; Mark Newman, Hall Green, Birmingham; John Breedon, Mapperley, Nottingham; Chi-Wah-Yau, London NW1; I. Murphy, Accrington, Lancs; Mark Vivash, Portsmouth; Mark Harris, Croydon, Surrey; Duncan Gordon, Brierfield, Lancs; Nicholas Winchester, Loughborough, Leics; Louis Wood, London E18; John Cotton, Great Yarmouth; A. P. Westney, Shoebury, Essex; William Biney-Tay, London W8; Daryl Bloomfield, Basingstoke, Hants; David Worsdale, Waltham Cross, Herts; Gornall Leach, Tyne & Wear; John Medany, North Harrow, Middx; Beowulf Grimbly, London N4; Bobby Earl, Prenton, Birkenhead; Paul Monger, Iver Heath, Bucks; James Solomon, Beverley, North Humberside; Fabio Passaro, Croesyceiliog, Cwmbran; John Crawford, Alexandria, Dunbartonshire; Gorbaksh Singh, Ilford, Essex; David Campbell, London SE14; Christopher Shaw, Southwom, Halifax; John France, Easterhouse, Glasgow; Richard Adamson, Taunton, Somerset; John Burnham, Penrith, Cumbria.

List below the story/programs and fact routines that you like best in *Load Runner*.

1

2

3

What do you dislike most in *Load Runner*?

.....

Do you have a computer? YES/NO

Name Age

Address

The data snake in this printout will provide you with an alternative to a digital computer. The snake begins with the letter A. All you have to do is find the correct letter A and follow the directions which are given below. North is straight up the page.

W E I A R Y O T
I W A L L G F I T
T A B N A V R T A
S A A L O R V I A
L D A M K G T U E
T C C N O T U W

Secret path: SE, SW, E, E, SE, SE, NE

A computer is given the following task. You think of a number between one and 100. In not more than seven guesses the computer can find the number. You must help the computer by telling it whether the last guess was lower or higher than the number you thought of. Can you describe how the computer goes about the task?

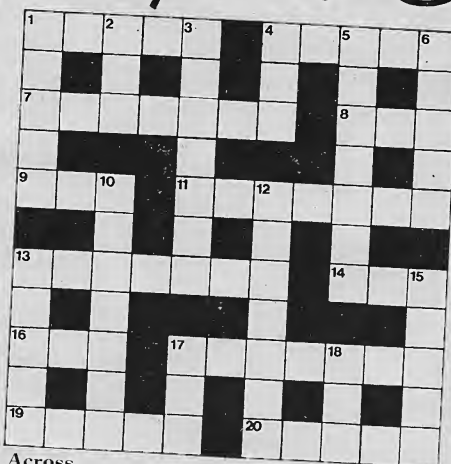
Wordplotter—

ANSWERS to the puzzles in last printout:

The Data Snake secret word is DIGITAL.

The Centipede is 640 pods long when it fills the screen.

Wordplotter 8



Across

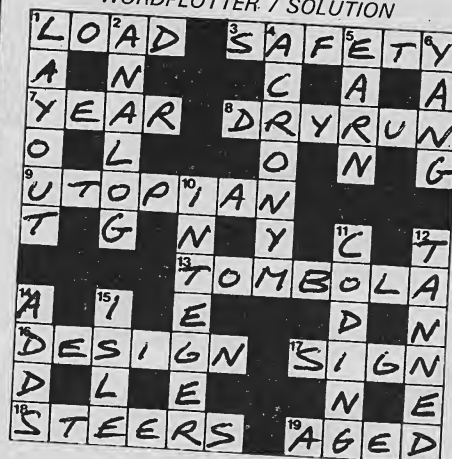
1. Computer worker (5)
4. First stage in computer use (5)
7. Tennis with linked computers? (7)
8. Positive answer (3)
9. Electronic data processing at first (3)
11. Input system for shops — how to behave in a pub? (3-4)
13. George's algebra (7)
14. Instruction in assignment (3)
16. Take little Susan to court (3)
17. Programmer's customers (7)
19. Legal files used in the Comal language (5)

20. They surround boards and may connect connectors (5)

Down

1. Set of hills the input number should be in (5)
2. Smallest number (3)
3. What you're in if you stay up late computing (7)
4. Used on PAPER (3)
5. To the employees, a firm's most important software? (7)
6. A sense, of art, perhaps (5)
10. It follows 4 across (7)
12. When the program finally succeeds or fails (3-4)
13. Fundamental programming language (5)
15. Jobs set by 17 across (5)
17. Tiny characters per second (3)
18. What parents do if you're computing? (3)

WORDPLOTTER 7 SOLUTION



INPUT/OUTPUT

Easy to read

I THINK your computer comic is good as it is almost easier to read than home computing magazines. The picture stories I like best are Time Plan 9, The Invasion of the Arcadians and I think Load Runner is good. Your Buzzword section and your A-Z of computers is useful, too.

What does ECC mean?

Patrick Lea, Cheshunt, Herts.

What do you mean, almost? ECC stands for European Communication Consultants. Anything else you would like to know?

Dislikes

THERE ARE some things I do not like about Load Runner. One thing is that the Decoder's Club is expensive. Could your price for membership be about £1, please?

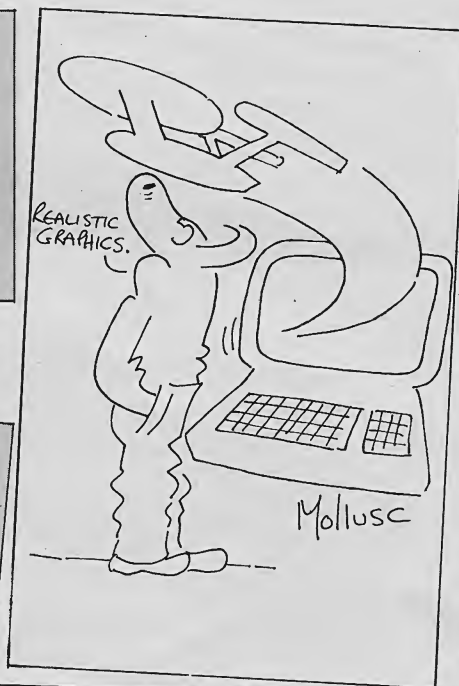
The second thing is that there is not sufficient information on new micros, games and educational programs, and books for micros. Perhaps there could be a section on what a micro is and a detailed section on a micro every issue.

S A Rahman

Perhaps you should be reading a computer magazine instead of a computer comic. In any case, there must be some bugs in your data files, reader Rahman. My operators have output data on every new micro launched since Load Runner was up and running—the Sord M5, the Aquarius and the Electron.

Each printout contains games reviews and micro specifications in my Softspot and A-Z of Computers fact routines. Reviews of books and educational software will be featured in future printouts.

From time to time I will allow readers to join the Decoders at a reduced rate. The first of the special offers can be found on the opposite page.



Brilliant

I HAVE NOT bought a comic for at least three years but when I saw that there was a computer comic, I jumped to it. Now I am sure I shall buy Load Runner for the next few years. Load Runner is a brilliant story; I love the idea of having a person inside a computer. Ram and Rom are really amusing. Computafax is interesting; so is Brainy's Brainbox and everything else is ace, including the crossword.

I am glad you have programs in the comic and I think they should be for different computers each printout but I think that you should have no more than a few programs each week as Load Runner is a comic, not a magazine.

Robert Courtney, Isleworth, Middx.

More programs

YOUR COMIC is one of the best I have ever read but you do not include many programs, hints or a guide to help first-time buyers. I own a Vic-20 and I am sure many other readers feel the same way.

I like your puzzle section but please give us some more programs.

Barry Jones, Warminster, Wilts

My programmers always aim to please, Barry, and you will find three pages of programs in this printout. Don't forget, I will pay £10 for each program printed, so if you have games or routines you think our readers might like, please send them. Include a stamped addressed envelope if you want your cassettes returned.

* Vectrex * * Competition *

- * 1st Niall Gilsonen, 9, Tina-hely, Co Wicklow *
- * 2nd Paul Smeaton, 12, Dundee *
- * 3rd Keshra Patel, 14, Harrow, Middx *
- * 4th Cuong Truong, 14, London W9 *
- * 5th Fiachra Stokes, 12, Ballin-teer, Dublin *
- * 6th Justin Freeman, 15, North Oxford *

I will pay £3 for each letter or joke printed.

Write to: The Controller,
Load Runner,
196-200 Balls Pond Road,
London N1 4AQ

FANTASTIC FREE GIFT!

IN PRINTOUT No 9

A great pop single **TALK TO ME** by the
new computer group **MAINFRAME**

Three ready-to-load programs for the Dragon, BBC B
and Spectrum computers providing a
dazzling graphic display to
accompany the music.

Load Runner meets the Spiders
in a deadly confrontation based
on the well-known computer
game.

Jan and Marc fight for their
lives against the evil Simian in
Trumbull's World.

All your favourite strips,
features, puzzles and
competitions.

DON'T MISS IT!

Place an order NOW
with your Newsagent
for Printout No 9.

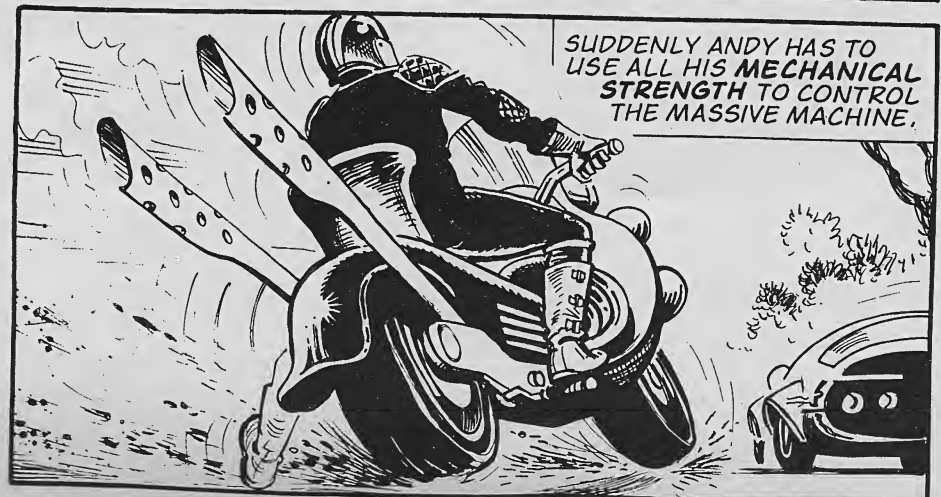
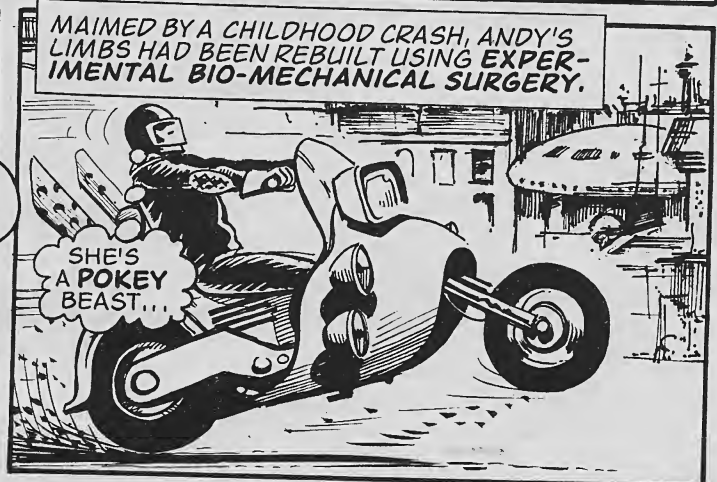
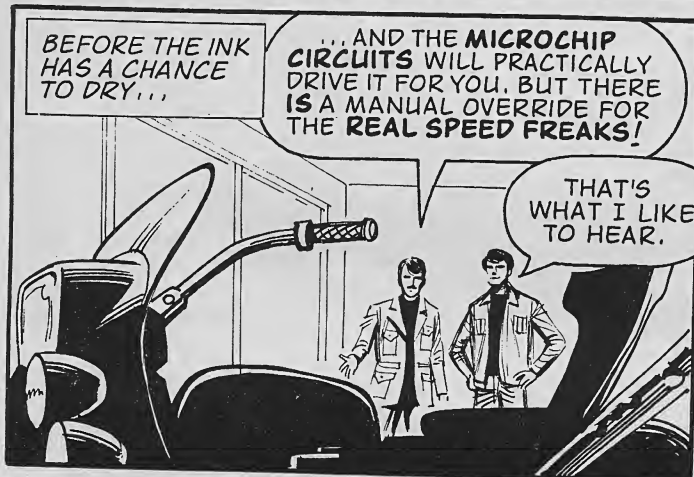
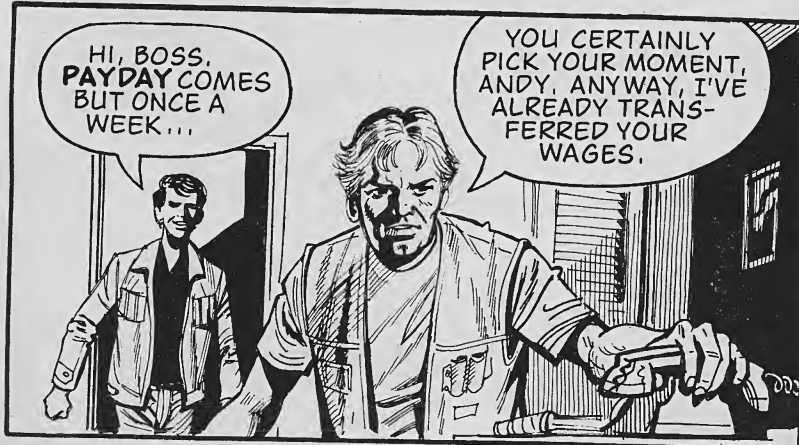
ON SALE
OCTOBER 13



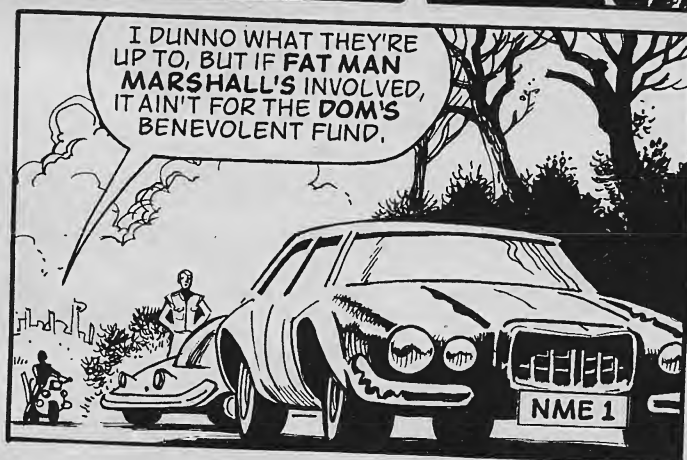
Andy Royd-the DOMINATORS

DAVY'S DOMINATORS HAVE BEEN THREATENED WITH CLOSURE BY NEAVE MARSHALL ESTATES IF THE TEAM OF ROBOT FOOTBALLERS FAIL TO MAKE A PROFIT IN THE COMING SEASON...

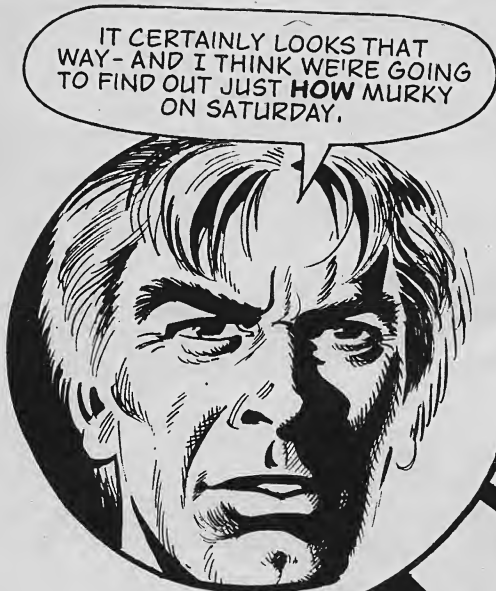
Rogue star!



BUT HE'D NOT LOST ANY OF HIS LUST FOR SPEED!



IN THE DOM'S COMPUTER ROOM, DAVY AND ISOBEL, THEIR NEW PROGRAMMER, LISTEN TO ANDY'S STORY.

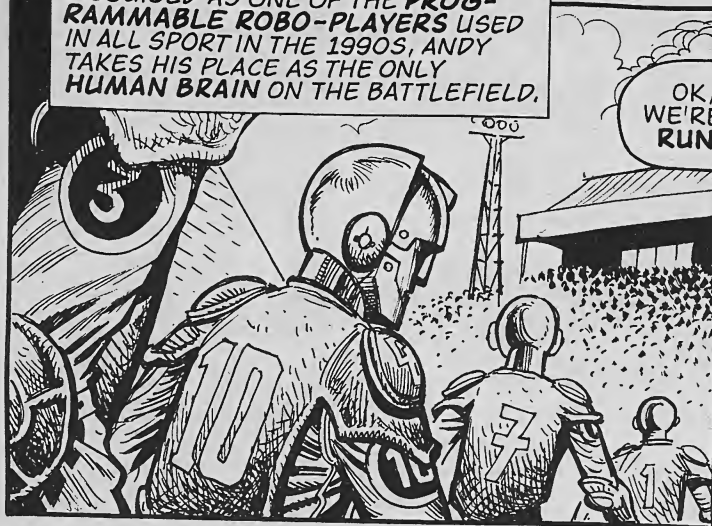


SATURDAY ARRIVES... AND SO DOES KIT CURSOR...



SCRIPT -
CHRIS WINCH
ART -
JOHN STOKES
LETTERS -
S. CRADDOCK

DISGUISED AS ONE OF THE **PROGRAMMABLE ROBO-PLAYERS** USED IN ALL SPORT IN THE 1990S, ANDY TAKES HIS PLACE AS THE ONLY **HUMAN BRAIN ON THE BATTLEFIELD.**



OK, KIT-
WE'RE UP AND
RUNNING!



ISOBEL'S NEW
PROGRAM CERT-
AINLY PUTS MEN
INTO SPACE.

WITH THE
DOMS ONE
UP...



...KIT CURSOR PLAYS HIS ACE!



WHAT IS THE SECRET OF
THE STRANGE BOX? FIND
OUT NEXT PRINTOUT!

Play in the big league — with only the best, newest programs!

We've searched for brilliant new program sources throughout the U.K. and North America to find an exciting collection of new games — and business programs — many of which cannot be bought by mail order from any other source!

Every month, we'll be adding to our catalogue to bring you the best of new games, new business, educational and household software. And the good news is — **we're specialising in programs for your Sinclair!**

With our special new deal — you just CAN'T GO WRONG.

- * A free offer every month (this time it's a free blank C20 cassette with every two games ordered)
- * A money-back guarantee if you're not entirely satisfied with your purchase — that's how confident we are about the quality and value!

All you have to do is look at our first HOT selection, then order quickly to be among the first to own these games of skill, intelligence and excitement (fast delivery is another of our specialities — so you could be using these new programs SOON).

FREE BLANK C20 COMPUTER CASSETTE WITH EVERY TWO CASSETTES YOU ORDER!

Remember there's no limit to the number of free cassettes you receive if your order justifies them — so why not get together with friends or user group members and share the freebies?

GUARANTEE

Order with complete confidence. If you are not entirely satisfied with the quality of your purchase return it to us within 7 days and we will provide a replacement.

GREAT VALUE! TREMENDOUS SELECTION! PLUS A FREE OFFER EVERY TIME!

Fill in the order form right away — we're guaranteeing fast delivery, quality and satisfaction (after all, we want you to come back for more!)

**The Software Workshop, Yew Tree, Selborne,
Hants GU34 3JP**



Here's a whole NEW selection of the latest games, the best-value software for your ZX-81 or Spectrum.

ZX81 Software

1-01 Stock Market

Buy and sell your way to millions! 16K RAM

£3.95

1-02 Football League

First division fun for the soccer enthusiast. 16K RAM

£3.95

1-03 Test Match

Match your wits alongside the superstars. 16K RAM

£3.95

1-12 Avenger

Avoid missiles and bombs to become the ruler. 16K RAM

£4.95

1-13 Protector

Defend your own ship from oncoming attackers. 16K RAM

£4.95

1-31 Comp-U-Share

Investment management program for unit trusts, shares and loan stocks. Complete documentation included. 16K RAM

£9.95

1-32 Comp-U-Tax

Accurate personal income tax calculator for 82/83 tax year. Full documentation included. 16K RAM

£9.95

2-14 Meteor Storm

Spectrum version of the ever-popular arcade game. 16K or 48K RAM

£4.95

2-15 Star Trek

Popular space program brought to life by excellent graphics. 48K RAM

£4.95

2-21 Frogger

Manoeuvre the frog across the road avoiding heavy traffic. 48K RAM

£5.95

2-22 Crazy Balloons

Guide the balloons round the maze without bursting. 48K RAM

£5.95

2-23 Arcadia

The expert's version of the popular 'Invaders' game. 16K or 48K RAM

£5.95

2-24 Golf

The finest of golf handicap games. 48K RAM

£5.95

2-25 Test Match

More exciting than the real thing! 48K RAM

£5.95

2-26 Derby Day

This favourite has to be a winner. 48K RAM

£5.95

2-27 Rescue

Rescue the Princess from marauding patrols. 48K RAM

£5.95

2-29 Jackpot

The harmless way to take on the one-armed bandit. 48K RAM

£5.95

2-41 Comp-U-Share

See 1-31 under ZX81. 48K RAM

£9.95

2-42 Comp-U-Tax

See 1-32 under ZX81. 48K RAM

£9.95

Spectrum Software

2-12 Avenger

(See 1-12 under ZX81). 48K RAM

£4.95

2-13 Sentinel

Guard your mother ship against alien attacks. 48K RAM

£4.95

To: The Software Workshop, Yew Tree, Selborne, Hants GU34 3JP

I wish to order the following programs. I understand that:

- * I will receive a FREE blank cassette with every 2 programs ordered
- * I can return products within seven days if not entirely satisfied and receive a replacement.

Ref No	Qty	Title	Price

Postage, packing and handling: add 45p for the first cassette, and 25p for each additional cassette. Non-UK orders add extra 50%

I enclose a cheque/postal order for _____

Name _____

Address _____

(Allow 28 days MAXIMUM FOR DELIVERY)

Total



ACORN HUNT

DAVID HUNT, 23-year-old brother of former world champion James, has embarked on what might prove to be the most important stage of his motor-racing career. Backed by Acorn Computers, David is driving a Ralt RT3 for the Eddie Jordan Formula Three team, the biggest of its kind in Britain, with five cars and drivers.

From the age of 16 David has been fascinated by racing and for three years he drove 100cc karts in his spare time from school. Eventually he decided to move to Formula Ford and, after working as an electrician, mechanic, painter and decorator, petrol pump attendant, milkman and finally salesman, he saved enough money and obtained sponsorship to

Acorn backs David Hunt in Formula Three

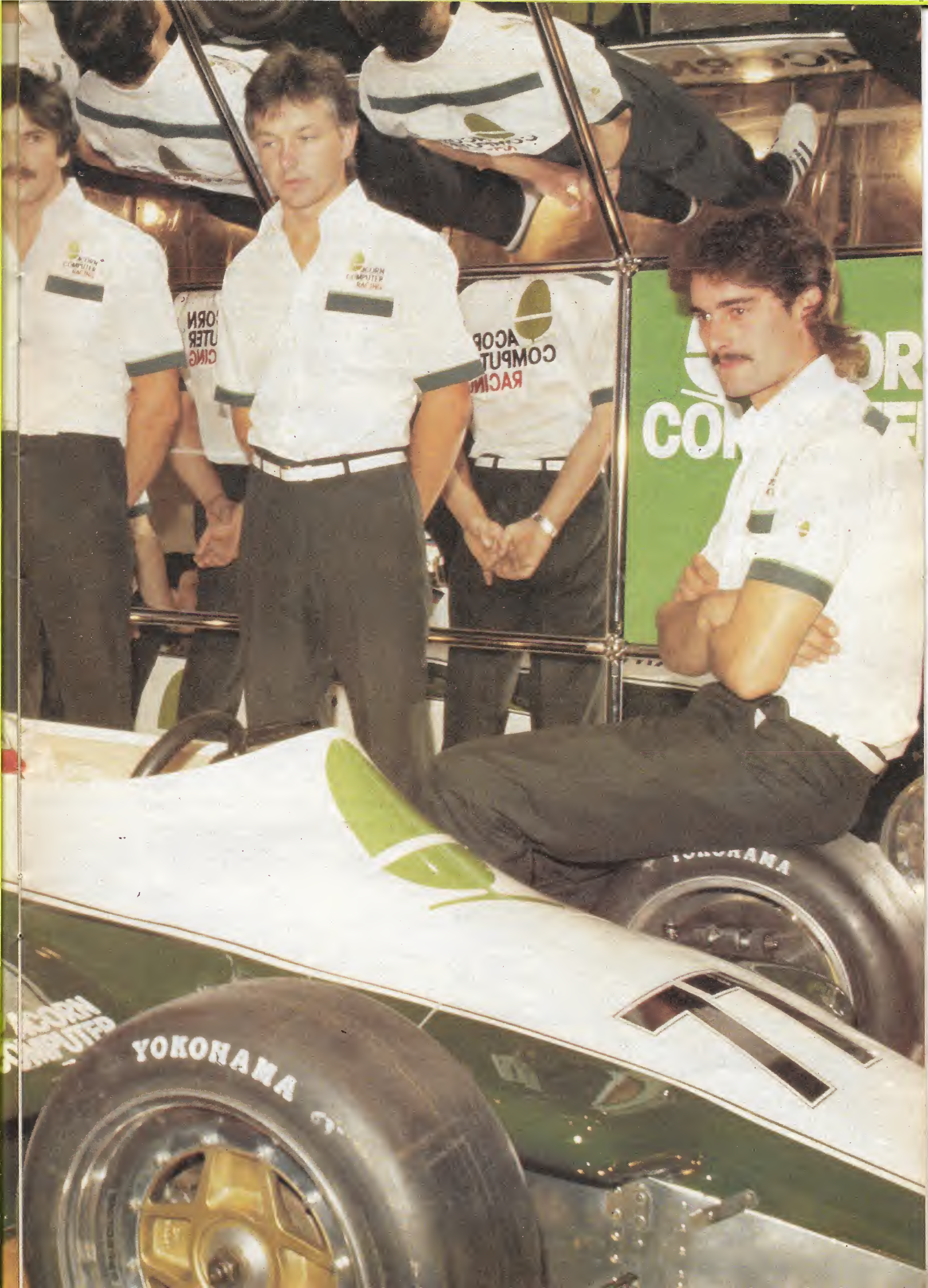
enter Formula Ford racing in 1981. In the 1982 season he received accolades from the race-going public and received a special commendation from the Guild of Motoring Journalists as an up-and-coming talent.

Not only will David be driving an Acorn-sponsored car but he will be involved with Acorn plans to develop a computer Car and Track Simulation system, which will allow racing teams to cope with all random factors and conditions which can occur on Europe's race tracks. Eventually, Acorn will be developing a fully-computerised car and pit service, with David as the guinea pig.

In addition to his racing exploits, David is now joint managing director of a successful Ferrari broking company at Farnham, Surrey and it seems that computers will soon be part of his day-to-day life there, too, as he is buying a BBC micro to help to run the business.

If you want to see David in action, he will be driving the Acorn car at Donington Park on October 8 and 9, at Thruxton on October 23 and again on November 12.







Underground movements

LAST YEAR, 541 million journeys were recorded on the London Underground and most of them involved the use of escalators and lifts.

Until recently, London Transport relied on station staff to report failure of the equipment but now it is experimenting with computer alarm systems at five stations on the Northern Line.

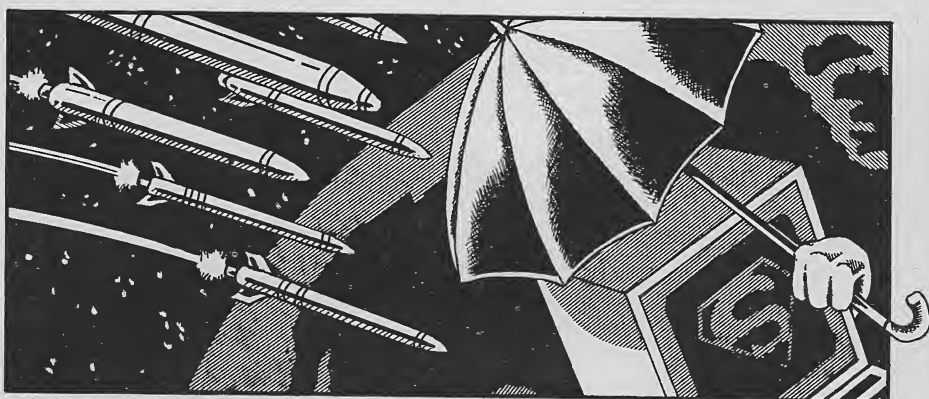
As soon as a lift or escalator fails, a report is sent to the Alphatronic computer at the Control Centre, detailing the name of the station and the equipment concerned. The computer is linked also with a new public address system, allowing announcements to be made from the control centre to any stations on the line.

Super-computer saves the day?

THE FILM *WarGames*, in which a super-computer reacts automatically to what it thinks is a Russian nuclear attack, plunging the United States into World War III, seems less far-fetched every day.

In American top-secret research establishments work is under way on developing a super-computer — a machine capable of thinking and

making decisions in split seconds. The super-computer will be incorporated in the revolutionary new U.S. missile defence system and will be capable of responding in seconds to a Soviet attack, shooting-down huge intercontinental ballistic missiles before the man on the ground even knows an attack has been launched.



Shoebox brainbox

IF ELECTRONIC hardware continues to shrink at its present rate, it is conceivable that within the next 20 years a computer with a capacity equivalent to the human brain will be no bigger than a shoe-

box and will cost little more than an average motor car. Thirty years ago the same brain-sized collection of hardware would have filled a football pitch and cost the equivalent of 10,000 million family cars.

The Computer Story

A HISTORY OF COMPUTERS
PART EIGHT

By THE 1930s - 100 YEARS SINCE BABBAGE LAID THE FOUNDATION FOR COMPUTERS - THE WORLD HAD CHANGED DRAMATICALLY. IN THE WESTERN WORLD MOST PEOPLE LIVED IN TOWNS, WENT TO SCHOOL, COULD READ AND WRITE, AND WORKED IN INDUSTRY AND COMMERCE.

MECHANISED TRANSPORT HAD MADE THE WORLD A SMALLER

THE WAY AHEAD

PLACE, AND ELECTRICITY REACHED INTO MOST HOMES, OFFICES AND FACTORIES.

ALTHOUGH AT FIRST SIGHT THEY MIGHT SEEM TO HAVE LITTLE TO DO WITH OUR STORY, THESE CHANGES - SOCIAL, TECHNICAL AND COMMERCIAL - PREPARED THE GROUND FOR THE GRADUAL INTRODUCTION OF COMPUTERS.

Above: Douglas DC-3 airliner and 'skyscrapers' - symbols of western man's technical and social progress by the 1930s.

Manual typewriter of the 1920s.



What a load of rubbish

STUDENTS at Aston University have been looking closely at people's dustbins, sifting the rubbish and feeding the data into a computer. A waste-ful use of new technology? Not really — the computer assessment of the refuse gives vital information about the amount of junk which can be usefully recycled.



● Buzzwords are the jargon of the computer world and can be very confusing. Below, *Load Runner* continues its glossary of computing terms. Get buzzing.

● **Fault.** A problem which occurs in the hardware of the computer. It could be something wrong with the electronics inside the keyboard casing or it could be a fault between the computer and one of the devices attached to it, like a disc drive.

● **Feed.** Giving information to the computer. It can be done in several ways—via the keyboard, from punched tape, from punched cards or from backing storage such as discs or cassette tape.

● **Feedback.** Information or data obtained from the computer. It will be output from a screen, a printer or a plotter. It is the opposite of feed and you can receive no feedback without giving the computer some feed in the first place.

● **Fibre optics.** The science of sending information along cables which are made up of a glass-like plastic compound. The information is sent along the line in the same way as a telephone call is sent along a wire but the result is usually visual instead of audio.

● **Field.** A portion of memory within a computer file of information which contains one bit of data. A field could, for instance, contain the date of birth of somebody.

● **File.** A collection of bits of data which have some connection with each other. For instance, a file could contain all the names and addresses of the people in your class at school. Files can be either data, such as names and addresses, or programs.

● **Floppy disc.** A plastic-coated, record-shaped object on which you can store information from a computer, such as programs or data. While it takes several minutes to load a program into a computer from cassette tape, it takes only a second to load from disc. That is because the computer has to read a program from tape at the speed of the tape recorder but the disc is faster.

● **Flowchart.** A way of putting on paper the way a program should work before writing that program. The chart is a simple model of what a program should look like when running properly.

● **Function.** Has two meanings. It can mean the operations which the computer can perform. It also describes the mathematical operations which the computer can handle. For instance, finding the square root of a number is a function and the computer language word to tell the machine to find a square root is SQR, followed by the number the square root of which you want to find.

TYPEWRITERS ULTIMATELY SHAPED THE APPEARANCE OF MODERN COMPUTERS — AND MADE PEOPLE FAMILIAR WITH KEYBOARDS, DOCUMENTS AND LETTERS.

SETTING TYPE (WORDS) IN METAL AND PRINTING FROM IT WAS ALWAYS EXPENSIVE. MANY INVENTORS TRIED TO MAKE A FAIRLY CHEAP MACHINE THAT WOULD WRITE IN SUCH A WAY THAT THE RESULT APPEARED PRINTED.

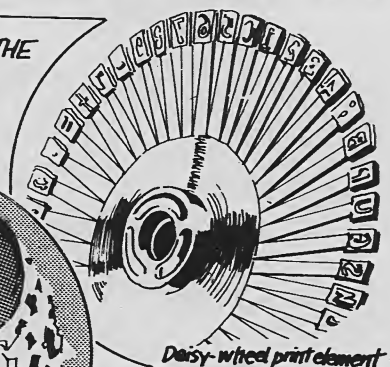
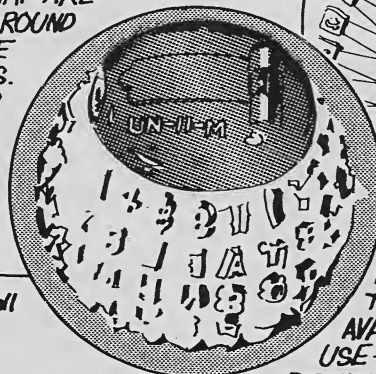
THE FIRST TO SUCCEED, IN 1867, WAS AN AMERICAN — C. LATHAM SHOLES. HE MADE HIS MARK ON PRACTICALLY EVERY COMPUTER IN USE TODAY —

Left: First working model of Sholes' typewriter. Below: 'QWERTY' Keyboard devised by Sholes.

THE 'QWERTY' KEYBOARD. TO PREVENT THE TYPE-BARS FROM JAMMING — CAUSED BY A BAR RISING TOO SOON BEFORE THE PREVIOUS ONE HAD FALLEN BACK — HE ARRANGED THOSE THAT ARE USED MOST OFTEN AROUND THE OUTSIDE OF THE SEMI-CIRCLE OF BARS.

THE LAYOUT WAS DESIGNED TO SLOW DOWN THE TYPIST ENOUGH TO ENSURE THE TYPEWRITER WORKED!

IBM golf-ball



IN THE 1920s ELECTRICALLY-POWERED TYPEWRITERS BECAME AVAILABLE FOR OFFICE USE — ALTHOUGH THEY DIDN'T BECOME COMMON

UNTIL THE 1950s. THE 1960s SAW THE INTRODUCTION OF THE GOLF-BALL TYPEWRITER BY IBM — WHICH ALLOWED THE TYPE-STYLE TO BE CHANGED AT WILL. THE DISTINCTION BETWEEN TYPEWRITERS AND COMPUTER PRINTERS IS QUICKLY DISAPPEARING NOW THEY BOTH USE DAISY-WHEELS.

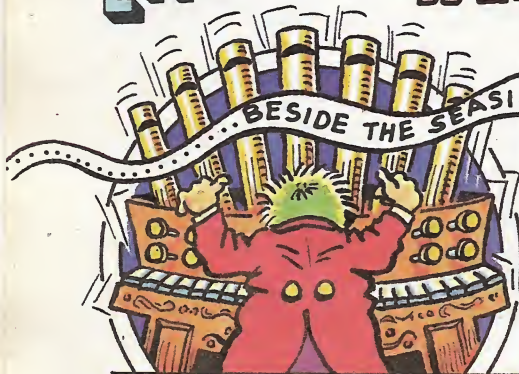
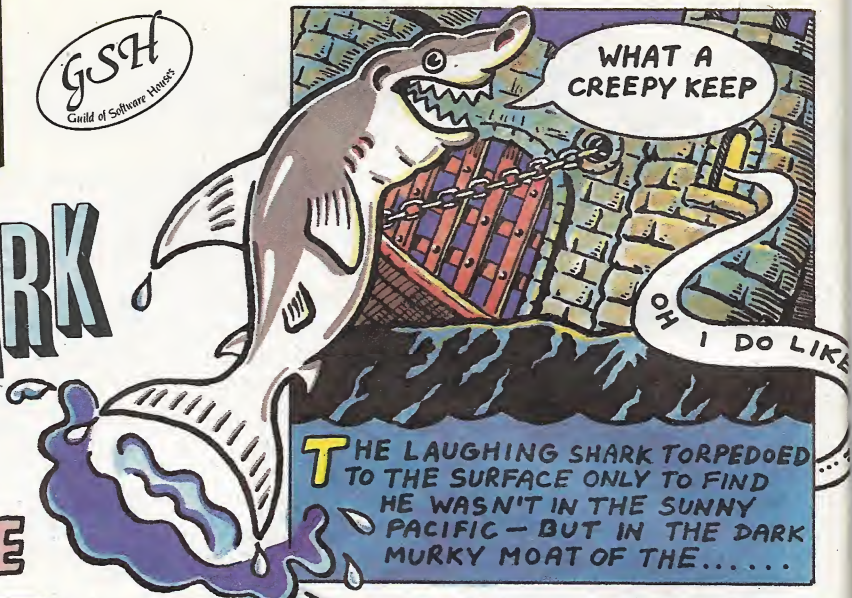
Written and drawn by Chris Smithers





THE AMAZING ADVENTURES OF THE LAUGHING SHARK

PART ONE



CASTLE ADVENTURE
WITH A THOUSAND DASTARDLY DEATHS - ACCOMPANIED BY THE MAD ORGANIST - PULLING OUT ALL THE STOPS.....



ESCAPING THE DEADLY SOUND OF MUSIC, THE LAUGHING SHARK NARROWLY AVOIDED A CRUISE LINER - IN A MOAT?!!



PASSING A PORTHOLE HE ESPIED NASTY DR. SINISTER PLANTING A BOMB. STOP HIM SOMEONE - OR THIS COULD TURN INTO A..... DEATH CRUISE!!



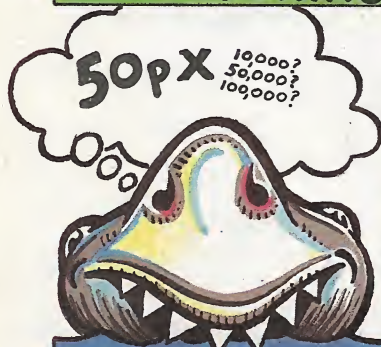
NOT WISHING TO SUFFER THE SAME FATE AS HIS COUSIN JAWS, OUR HERO DECIDED TO CONSULT THE ORACLE OF I CHING....



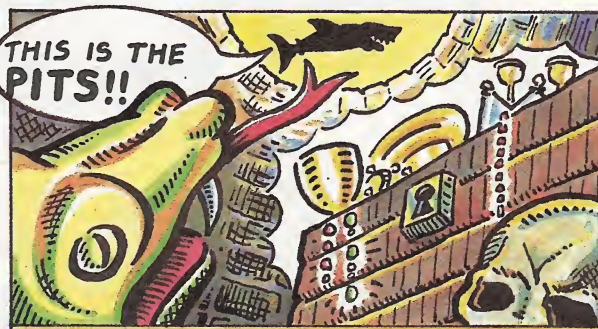
THE 4000 YEAR OLD CHINESE ART OF THE HEXAGRAM - WITH ITS KEY TO FUTURE AND THE MEANING OF LIFE.



OVERFLOWING WITH NEWLY FOUND SELF-CONFIDENCE, LAUGHING BOY FELT READY TO HELP PROF. BATTY SOLVE THE PROBLEM OF LOTJIX AND FIT THE SHAPES —



- INTO THE GRID. IF YOU MANAGE TO SOLVE IT, YOU COULD WIN THE LOTJIX POT OF SILVER. 50p X EACH COPY SOLD



DIZZY FROM HAVING TO USE HIS LITTLE FISHY BRAIN OUR INTREPID 'CHUCKLES' GOT LOST AND FOUND HIMSELF IN THE DARK DEPTHS OF KILLER CAVERNS!



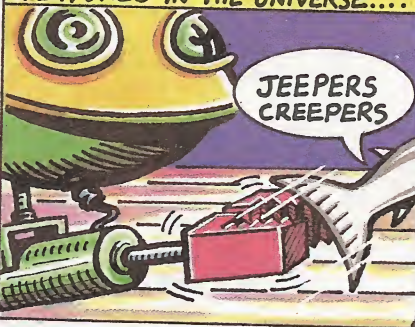
WITH ITS HORDES OF TREASURE AND DEADLY GUARDIANS... TOO MUCH, EVEN FOR A SUPER FISH, SO HE HOPPED ON A BUS.

AND WENT OFF TO SPEND A DAY AT THE RACES, HAVE A FLUTTER OR TWO, EVEN INVEST HIS WINNINGS IN BECOMING A **RACING MANAGER**



A **CREEPER** IN ITS CRAZED QUEST FOR POWER CELLS.... STOP IT OR END CLICHÉS AS WE KNOW THEM.

FLUSH WITH HIS SUCCESS ON THE 'GEE GEE'S', SMILEY WAS ALMOST NIPPED IN THE TAIL BY ONE OF THE MOST FEARED CREATURES IN THE UNIVERSE....



HEADING BACK TO SEA, THE LAUGHING SHARK HAD TO AVOID THE ALIEN 'MUNCHIES' NIBBLING AWAY AT A GIANT DAM. HELP! IF THE DAM BURSTS, IT WOULD FLOOD **ENVAHI**

FIN

BACK TO THE SUNNY PACIFIC

— TO BE CONTINUED —

NEXT

YOU MUST NOT MISS....

DARKNESS ON THE EDGE OF PENCE!

VIRGIN GAMES GANG

Our **GANG** is growing in numbers all the time, and everybody who buys one of our **NEW GAMES** will **RECEIVE**:

- a year's **FREE MEMBERSHIP** of the **GAMES GANG**;
- **FREE ENTRY** in the next **VIRGIN GAMES GANG DRAW**;
- **6 FIRST PRIZES**, consisting of a **VIRGIN DAY OUT** – a trip on the **VIRGIN GAMES FUN BUS** to the **VIRGIN MANOR RECORDING STUDIO** in Oxfordshire. And then be our guest at the famous **KENSINGTON ROOFTOP NIGHTCLUB, "THE GARDENS"**;
- **50 SECOND PRIZES** of **VIRGIN GAMES T-SHIRTS**;
- **100 THIRD PRIZES** of **VIRGIN GAMES POSTERS**.

EXISTING TITLES

Other titles in the **VIRGIN GAMES** range are: **VGA 1003 – SHEEPWALK** by Gregory Trezise for **SPECTRUM 48K** A sheepdog trial in your living room! **VGA 1001 – YOMP** by Terry Murray and Roy Poole for **SPECTRUM 16 & 48K** Command the paras and take on the impossible. **VGA 1002 – STARFIRE** by Martyn Davies for **SPECTRUM 48K** Rid the galaxy

VIRGIN GAMES BUS TOUR

VIRGIN GAMES ARE ON THE ROAD! Look out for the **VIRGIN GAMES FUN BUS**. From **SEPTEMBER** onwards our eye-catching double-decker, games bus will **VISIT TOWNS** throughout the **U.K.**, demonstrating our games to the public, in conjunction (where possible) with local radio stations.

GAMES AVAILABILITY

If your **LOCAL RETAILER** is not yet stocking **VIRGIN GAMES** – tell him he should be – but, however, you can **ORDER DIRECT** from **"I'VE GOT NO**

of the Xtardan battle cruisers – a game of strategy and skill. **VGA 1004 – GOLF** by David Thompson for **SPECTRUM 16 & 48K** Championship golf in your own home. **VGA 2001 – BUG BOMB** by Simon Birrell for **BBC B A** skin-tingling new arcade game. **VGA 2002 – LANDFALL** by Gregory Trezise for **BBC B A** An exciting and realistic space ship landing simulator. **VGA 2003 – SPACE ADVENTURE** by

GOOD LOCAL RETAILER" dept., **VIRGIN GAMES, 61-63 PORTOBELLO ROAD, LONDON W11**, enclose a cheque or postal order for the right amount and **DON'T FORGET** to put your name and address – people do, you know!

THE "I WANT TO BE RICH AND FAMOUS" DEPARTMENT

If you have a yearning to be **RICH AND FAMOUS** and have written an **ORIGINAL GAMES PROGRAM**, with good graphics, for any of the popular home computers other than the **ZX81**, **PLEASE SEND A CASSETTE VERSION** (with details) **TO US**.

R. Thomas and A. Thomas for **BBC B A** A graphic adventure set on a seemingly abandoned ship drifting through space. **VGA 3001 – MISSION MERCURY** by Steve Lee for **VIC 20 (UNEXPANDED)** Land your craft on the surface and rescue the scientists... but beware the asteroid birds.

September RELEASES



I CHING
by James Breffni
DRAGON 32
VGB 4002
Consult the Oracle – Determine your future.
£6.95 R.R.P.

RACING MANAGER
by Mark Alexander
SPECTRUM 48K
VGC 1005
All the thrills of the racing world.
£5.95 R.R.P.



LOJIX
by Steve Webb
SPECTRUM 48K
VGC 1006
An intriguing intellectual puzzle – beat the puzzle, win the money.
£5.95 R.R.P.



CASTLE ADVENTURE
by Conrad Jacobson
DRAGON 32
VGB 4003
A humorous (insane) adventure game – set in and around an old castle.
£6.95 R.R.P.



DEATH CRUISE
by Lee J. Brookes
DRAGON 32
VGB 4001
There's murder afoot on the high seas.
£6.95 R.R.P.



ENVAHI
by Jeremy Walker
VIC 20 (+8K EXPANSION)
VGC 3002
The game of the film of the book of the game.
Joystick/key
£5.95 R.R.P.



CREEPERS
by Nick Rowden
VIC 20 (+3K or 8K EXPANSION)
VGC 3003
An original, fast-moving arcade game.
Joystick/key
£5.95 R.R.P.



KILLER CAVERNS
by Daryl Bowers
ORIC 16K & 48K
VGC 5001
A graphic adventure game set in killer caverns.
£5.95 R.R.P.

All our fun-to-play games are available from **BOOTS, MENZIES, DIXONS, THE GAME CENTRE, PHOTOMARKETS, VIRGIN RECORDS** and all **GOOD** computer shops everywhere.

To obtain **REVIEWS** of current releases please write to the **"DON'T JUST TAKE OUR WORD FOR IT! Dept."** at: **VIRGIN GAMES LTD. 61-63 PORTOBELLO ROAD LONDON W11 3DD**

THE INVASION OF THE ARCADIAN

WHILE AGGIE AND BEN HAVE FOLLOWED ONE OF THE DAZERS TO THE ARCADIAN EMPIRE, BACK AT THE WAREHOUSE JO AND D ARE STILL CONCEALED, AWAITING DEVELOPMENTS.

I'M GETTIN' BORED. WHY DO WE 'AVE TO 'ANG AROUND 'ERE? WHY COULDN'T WE GO WITH THE OTHERS?

SCRIPT:
LES COOKMAN
ART:
JOHN STOKES
LETTERS:
STEVE POTTER

SSSH!
WE NEED TO SEE WHAT HAPPENS TO THIS DAZER. HE'LL RECEIVE INSTRUCTIONS SOON, AND THEN ... THERE'S A VAN ARRIVING OUTSIDE!

THE DAZER RECEIVES HIS INSTRUCTIONS.

OUTSIDE, ANOTHER DAZER HAS ARRIVED.

A DELIVERY OF RECEIVERS TO BE UNLOADED. PLEASE CONFIRM.

IT SEEMS TO BE A DELIVERY. I MUST TRY TO HEAR...

UNLOAD AND RETURN TO BASE IMMEDIATELY. IRREGULARITIES UNDERGOING INVESTIGATION.

NOW, THERE'S AN IDEA. I WONDER HOW BIG THAT VAN IS?



JO PUTS HER WILD PLAN INTO ACTION.



OFF YOU GO, MATE, AND I CAN NIP IN WHILE YOU'RE NOT LOOKIN'.



THE DELIVERY COMPLETE, THE DAZER PREPARES TO LEAVE...



IF ONLY WE COULD HAVE FOLLOWED THAT VAN AND KEPT WATCH HERE, JO.



SHE MUST HAVE GONE IN THE VAN. NOW I'LL HAVE TO FOLLOW HER. THIS CHANGES EVERYTHING.

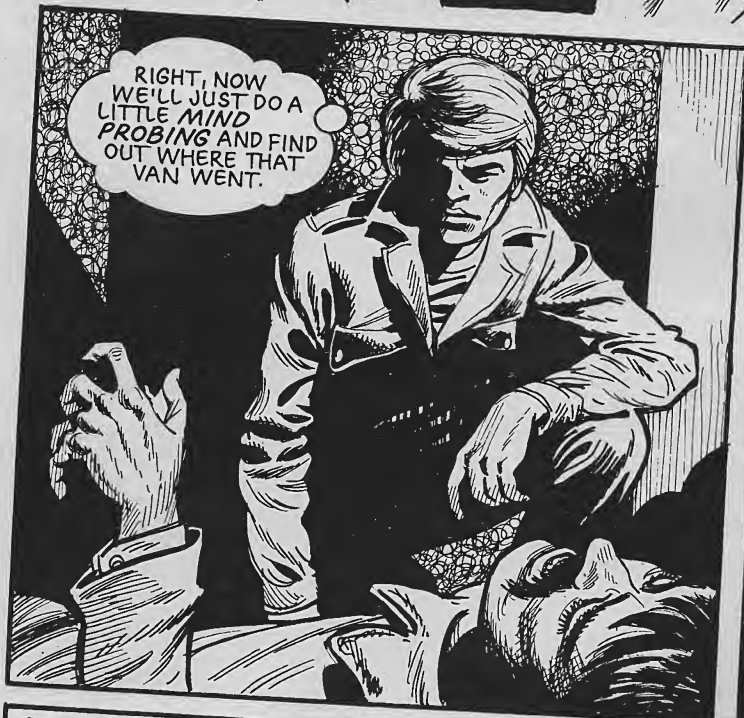


JUST KEEP FACING THAT WAY, DON'T TURN ROUND!

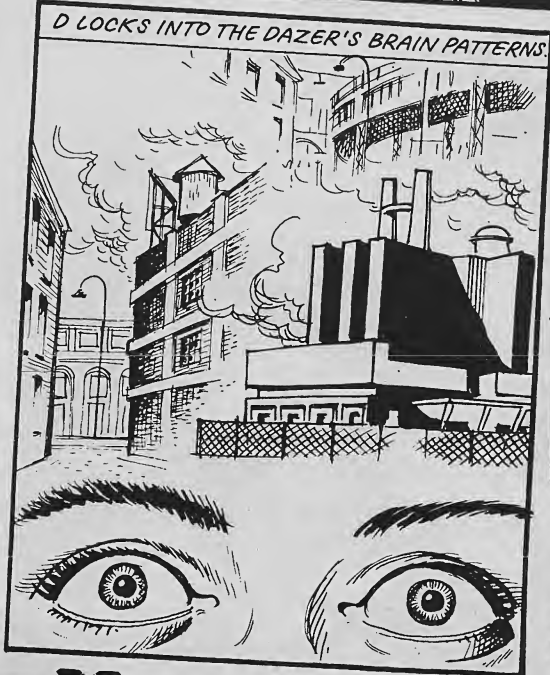


SWIFTLY...

EUKK!!



RIGHT, NOW WE'LL JUST DO A LITTLE MIND PROBING AND FIND OUT WHERE THAT VAN WENT.



D LOCKS INTO THE DAZER'S BRAIN PATTERNS



THE NAME OF THE LOCATION HAS BEEN ERASED FROM HIS MIND. I HAVE TO MEMORISE THE WHOLE ROUTE.



NOW TO FOLLOW THAT CRAZY KID — AND I THINK I KNOW HOW!

CONTINUED
NEXT
PRINTOUT.

Second
Edition Just
published

THE GOOD COMPUTING BOOK FOR BEGINNERS

PLUS a complete practical glossary of terms

If you only buy **ONE**
computing book

THIS IS THE CLASSIC!

An entertaining, but **thorough** reference source with the most readable, comprehensive glossary you'll find anywhere. The Good Computing Book for Beginners is an essential A-Z of all the facts you need to know about computing — and none you don't!

Whether you're brand new to computing, or an old hand keen to stay ahead, you'll score by keeping this classic, top-selling book within reach to use again and again.

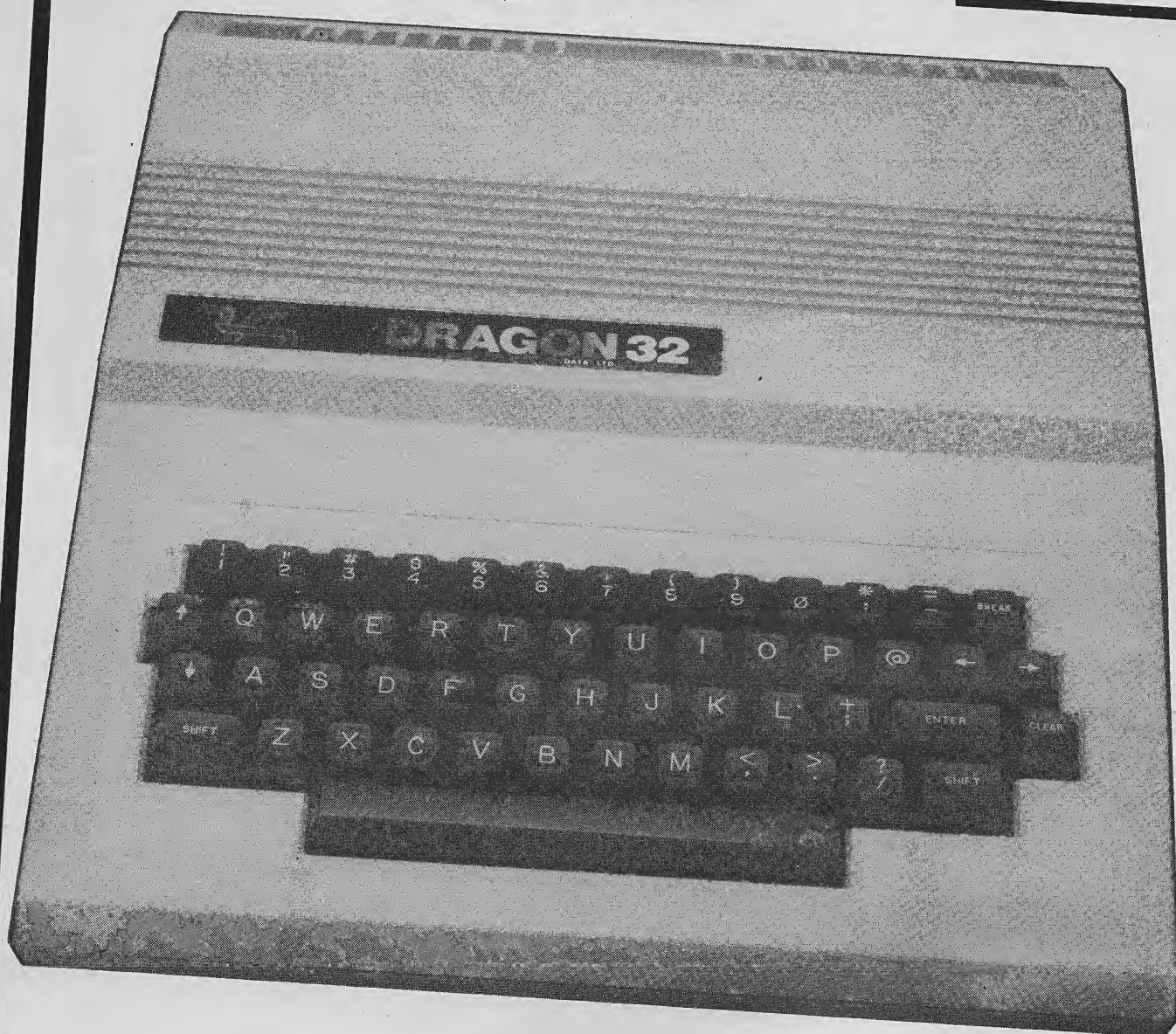
The author, Dennis Jarrett, is a successful journalist who was also founder editor of Which Computer? magazine — so his first edition quickly became a standard work. Now this new, substantially enlarged and revised edition covers the latest trends, terms and technology with the relevant facts — and **ONLY** the relevant facts — in **plain English**.

Here's another fact you'll find fascinating: it will only cost you £2.95!

Use the coupon below to get your copy right away — or buy it soon from your bookshop. It's the **one** book you'll turn to again and again.

Please send me _____ copy(ies) of The Good Computing Book for Beginners by Dennis Jarrett at £2.95 each plus 50p post and packing. I enclose a cheque for _____
account Visa/Access/Diners/Amex number _____
Signature _____ Name _____ Address _____
Send to: _____ (please print clearly)
FCC PUBLICATIONS LIMITED
200 Balls Pond Road
London N1 4AQ

Dragon 32



**Dragon Data Ltd,
Queensway,
Swansea SA5 4EH**

Specifications

Price
Numbers sold
How sold
Processor
Standard RAM
Expansion RAM
Basic + operating system
Display
Tape recorder
Backing storage

Colour

Optional

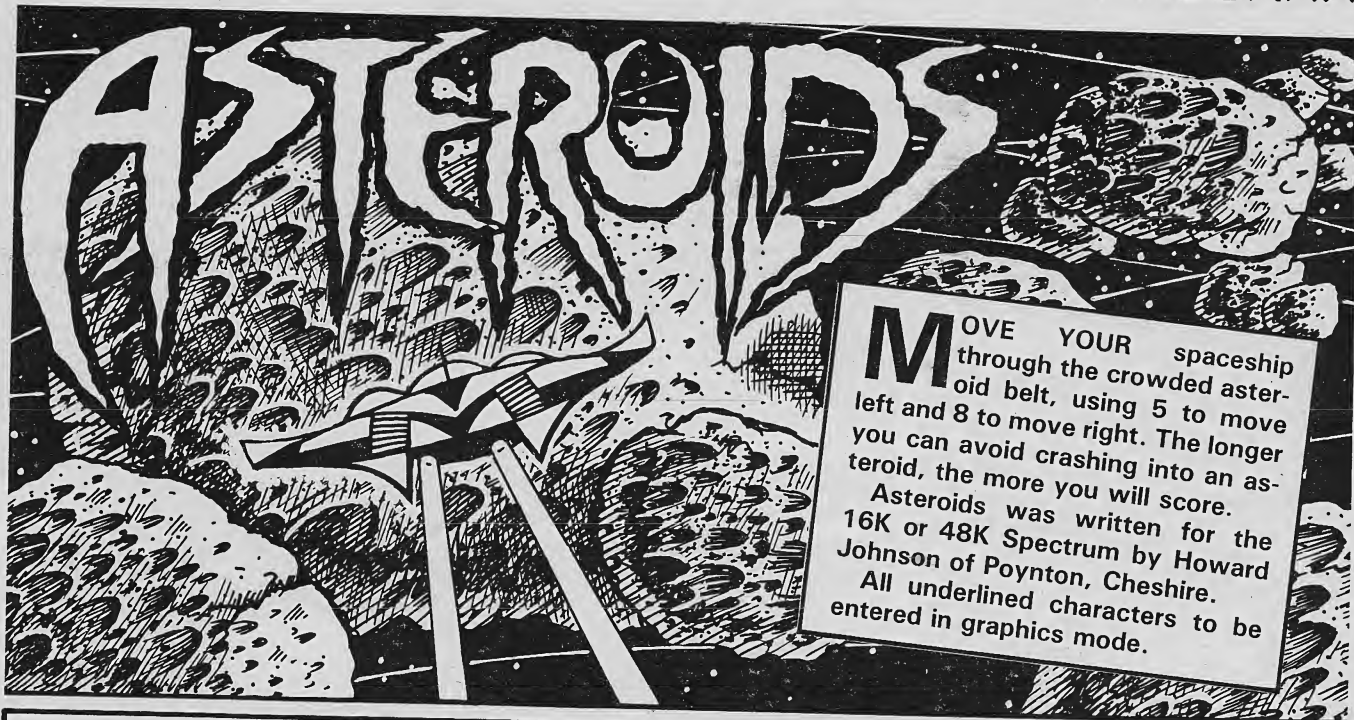
£175
100,000 +
Assembled
6809
32K
—
16K
16 lines × 32 characters
Any
Disc drives

Software

Microdeal, 14 Truro Road, St Austell, Cornwall, PL25 5JE.
Soft Joes Software, Business Centre, Claughton Road, Birkenhead, Merseyside.
Salamander Software, 17 Norfolk Road, Brighton BN1 4AA.

Comments

The Dragon has always been a popular computer, although the manual for the machine has been criticised strongly. Dragon Data plans to expand the machine with a new operating system and disc drives later this year. Little software has been produced for the Dragon and most of it which is available is from the United States or has links with the market there.



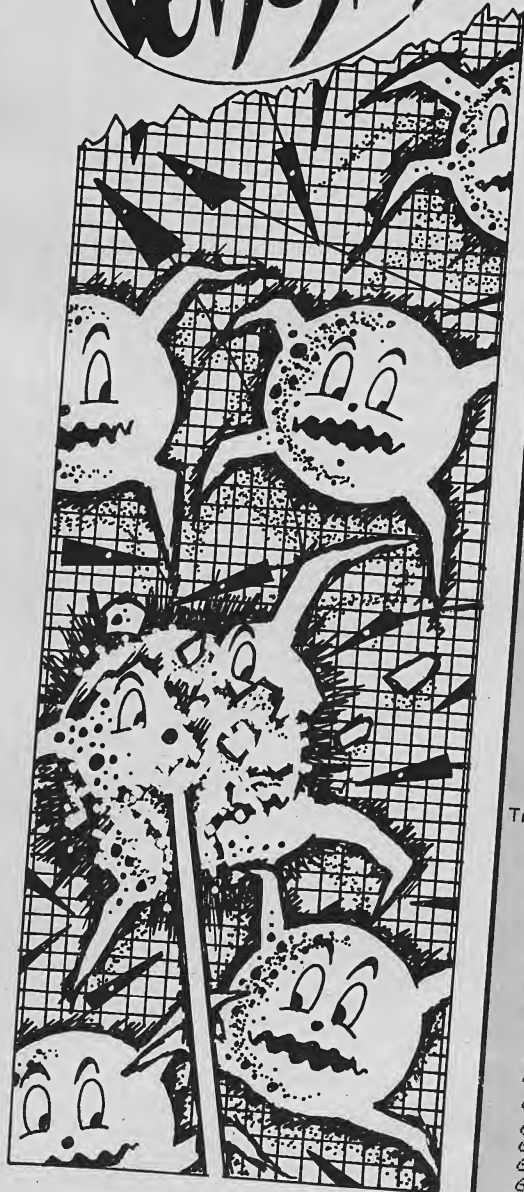
MOVE YOUR spaceship through the crowded asteroid belt, using 5 to move left and 8 to move right. The longer you can avoid crashing into an asteroid, the more you will score. Asteroids was written for the 16K or 48K Spectrum by Howard Johnson of Poynton, Cheshire. All underlined characters to be entered in graphics mode.

```

8 PAPER 0: BORDER 0: INK 6
9 GO SUB 1000
10 GO TO 6000
20 LET a=INT (RND*30)
30 PRINT AT 21,a: INK 4: "ab"
40 LET x=x+(INKEY#="8")-(INKEY#="5")+(x-2<1)-(x+2>20): BEEP .0
.05,.0: BEEP .002,40: LET sc=sc+1: BEEP .000,10
60 POKE 23692,255: PRINT AT 21,0''
70 PRINT AT 0,x-1: "AT 9,x-2:" "AT 9,x+1:"
80 PRINT AT 9,x: INK 6: BRIGHT 0:"c"AT 10,x-1:"def"
90 IF ATTR (11,x-1)=4 OR ATTR (11,x)=4 OR ATTR (11,x+1)=4 THEN GO TO 2000
140 GO TO 20
1000 CLS
1010 INK 6
1060 FOR f=-40 TO 60: BEEP .005, f: NEXT f
1070 FOR f=60 TO -40 STEP -1: BEEP .005,f: NEXT f
1090 PRINT "" Press any key to continue": PAUSE 0
1090 RETURN
2000 PRINT AT 9,x-1:"***"AT 10,x-1:"***": BEEP .0,20: BEEP .7,15
3000 CLS: PRINT AT 6,10:"You Crashed"" Score="sc'
IF sc>hi THEN LET hi=sc: PRINT "Your name ?": INPUT n$
3005 PRINT "" Hi Score="hi:" By ": PRINT AT 14,15-(INT (LEN n$)/2),n$
3010 PRINT "" Another Game ?"
3020 IF INKEY#="9" OR INKEY#="Y" THEN GO TO 7000
3030 IF INKEY#="n" OR INKEY#="N" THEN STOP
3040 GO TO 3020
4000 CLS: LET sc=0: LET x=15: INK 6: PAPER 0: BORDER 0: PRINT AT 9,x) BRIGHT 0: INK 6:"c"AT 10,x-1:"def"
4010 GO TO 20
6000 CLS: LET n$="": LET hi=0: FOR f=0 TO 5: FOR g=0 TO 7: READ a: POKE USR CHR# (144+f)+g,a: NEXT g: NEXT f
7010 PRINT "" The aim of this game is to""dodge the oncoming asteroids""by moving left or right."
7020 PRINT "" This is your spaceship :""
c
def"
7030 PRINT "" Left - '5' Right - '8'"
7040 PRINT "" Press ENTER to start game"
7050 BEEP .01,INT (RND*40)
7060 IF INKEY#<>CHR# 13 THEN GO TO 7050
7070 PAPER 0: BORDER 0: INK 6: CLS
7080 GO TO 4000
9000 DATA 7,63,123,127,62,69,15,9,224,252,222,255,255,247,250,240
9040 DATA 126,126,96,231,231,231,231,255,3,7,12,24,48,48,96,240,255,255,219,24,60,126,126,90,192,224,48,24,12,12,6,15

```


Venusians



VENUSIANS for the BBC Model B is a quick firing game which will stretch your nerves to the limit. Controlling a laser base at the bottom of the screen you must destroy the Venusians which zoom randomly towards you, using the left and right cursor keys to move and SHIFT to fire.

Difficult to beat, and with excellent graphics, Venusians was written by Sam Butchart, 12, of Warley, West Midlands.

```

>LIST
10MODE 7:VDU 23;8202;0;0;0;
20ON ERROR MODE7:END
30PROCINSTRUCT
40MODE 2:VDU 23;8202;0;0;0;
50*FX 4,1
60VDU 23,240,255,219,255,195,255,255,219,219
70VDU 23,241,16,84,84,124,84,16,0,0
80FOR s%=1 TO 25:VDU 18,0,2,25,69,RND(1279);RND(1023);:NEXT
90SCORE=0:dead=FALSE:shot=FALSE
100A=8:B=30:Z=2:X=RND(15)
110ENVELOPE 2,1,-2,0,0,100,0,0,0,0,0,0,0
120ENVELOPE1,2,0,0,0,0,0,9,0,-2,-2,120,80
130ENVELOPE 3,129,2,4,6,28,14,7,0,0,0,-80,80,80
140REPEAT
150COLOUR 7
160PRINT TAB(1,1)"SCORE ";SCORE
170PROCship
180IF shot=TRUE PROCfire
190PROCwait(SKILL%-SCORE*2)
200PROCalien
210UNTIL dead=TRUE
220MODE 7:*FX 4,0
230VDU 23;11,0;0;0;0
240PRINT TAB(5,8)"YOU SCORED ";CHR#129;CHR#136 SCORE
250PRINT TAB(5,10)"ANOTHER GO (Y/N) ";
260INPUT g$
270IF LEFT$(g$,1)="Y" THEN CLEAR:RUN
280CLS:END
290DEF PROCship
300COLOUR 2
310PRINT TAB(A-1,B)CHR#32;TAB(A,B)CHR#241;TAB(A+1,B)CHR#32
320IF INKEY(-26) AND A>1 A=A-1
330IF INKEY(-122) AND A<16 A=A+1
340IF INKEY(-1) THEN shot=TRUE
350IF SKILL%=3 GOTO 370
360w%=INKEY$(6)
370ENDPROC
380DEF PROCwait(wt%)
390FOR w%=1 TO wt%:NEXT
400ENDPROC
410DEF PROCalien
420SOUND 2,-8,((SCORE+1)DIV4)MOD255,1
430COLOUR4
440PRINT TAB(X,Z-1)CHR#32;TAB(X,Z)CHR#240;TAB(X,Z+1)CHR#32
450Z=Z+1:IF Z=30 PROCsound:dead=TRUE
460ENDPROC
470DEF PROCfire
480SOUND 0,1,7,5:SOUND 1,2,20,9
490COLOUR1
500FOR f%=B-1 TO Z STEP-1:PRINT TAB(A,f%-1)" ";TAB(A,f%)!";
TAB(A,f%+1)" ":NEXT:PRINT TAB(1,f%)STRING$(18," ")
510 SOUND 1,-10,177,2
520IF A=X PROChit
530shot=FALSE
540ENDPROC
550DEF PROChit
560SCORE=SCORE+10:SOUND 3,3,50,10
570CLS:FOR s%=1 TO 25:VDU 18,0,2,25,69,RND(1279);RND(1023);:NEXT
580Z=2:X=RND(15)
590ENDPROC
600DEF PROCsound
610LOCAL x%
620FOR x%=1 TO 20
630SOUND 1,-12,30,1:SOUND 1,-12,100,1
640NEXT x%
650ENDPROC
660DEF PROCINSTRUCT
670PRINT CHR#141CHR#157CHR#129CHR#136"
680PRINT CHR#141CHR#157CHR#129CHR#136"
690PRINT
700PRINT"You must stop the "
710PRINT"Venusian invaders from "
720PRINT"landing on Earth by destroying"
730PRINT"them with your rapid fire"
740PRINT"blast cannon."
750PRINT
760PRINT" The left and right cursor keys"
770PRINT"move your fighter craft left and right."
780PRINT"Press 'SHIFT' to fire cannon."
790PRINT
800PRINT" Enter skill level (1 to 3)"
810INPUT "1 is the easiest "skill%
820IF skill%<1 OR skill%>3 GOTO 790
830ON skill% GOTO 840,850,860
840SKILL%=300:GOTO 870
850SKILL%=200:GOTO 870
860SKILL%=100
870PRINT:PRINT CHR#141" GOOD LUCK!":PRINT CHR#141" GOOD LUCK!"
880PRINT:PRINT" Press 'SPACE BAR' to start"
890REPEAT UNTIL GET=32
900ENDPROC

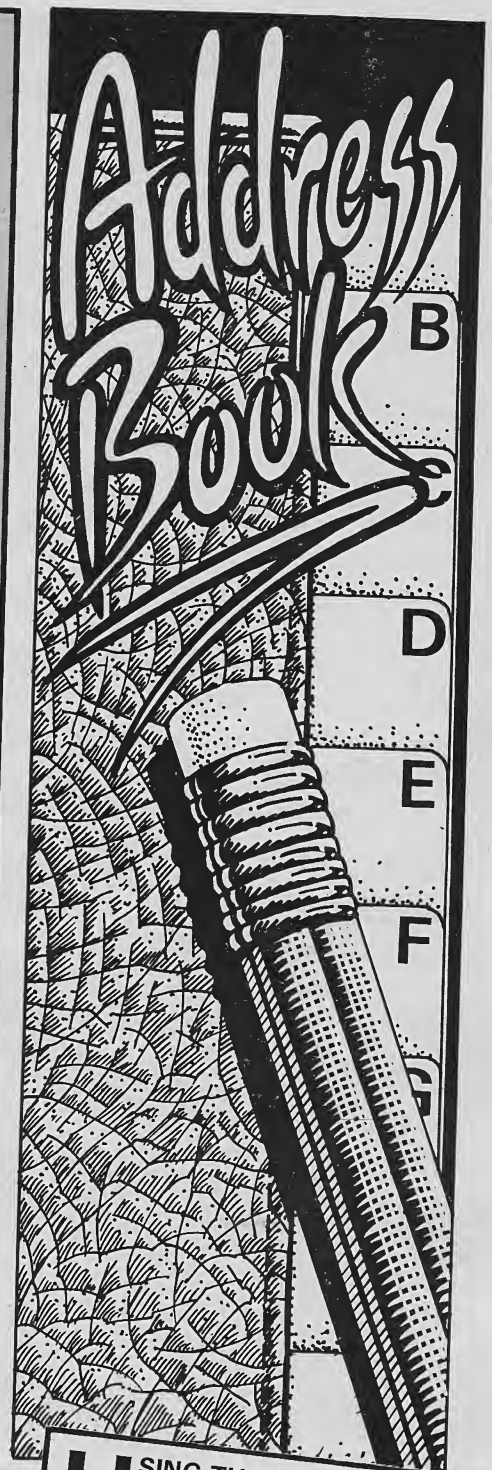
```

VENUSIANS"
VENUSIANS"


```

80 POKE788,194
90 REM
100 POKE36878,15:POKE650,0:PRINT"J":CHR$(142):CHR$(8):OPEN1,0:POKE36879,26
110 DIMPH$(171),STT$(171),LC$(171),TW$(171),CN$(171),PC$(171)
120 DIMPPH$(171)
130 REM**OPTION**
140 X$="":Z$="":DATA BASE$=""
150 PRINT"J":X$:Z$:X$:PRINT"*****1:ENTER DATA":PRINT"*****2:VIEW"
160 PRINT"*****3:FIND":PRINT"*****4:HELP":PRINT"*****5:FILE IN"
170 PRINT"*****6:FILE OUT":PRINT"*****6:UP DATA"
180 GETA$:IFA$="":THEN 260
190 IFA$="":THEN370
200 IFA$="":THEN490
210 IFA$="":THEN600
220 IFA$="":THEN890
230 IFA$="":THEN810
240 IFA$="":THEN970
250 GOTO180
260 REM**ENTER DATA**
270 FORN=0TO170:IFNA$(N)=""THEN290
280 NEXTN:GOTO130
290 PRINT"NAME:":INPUT#1,NA$(N):PRINT:PRINTX$
300 PRINT"STREET:":INPUT#1,STT$(N):PRINT:PRINTX$
310 PRINT"DISTRICT:":INPUT#1,LC$(N):PRINT:PRINTX$
320 PRINT"TOWN:":INPUT#1,TW$(N):PRINT:PRINTX$
330 PRINT"COUNTY:":INPUT#1,CN$(N):PRINT:PRINTX$
340 PRINT"CODE:":INPUT#1,PC$(N):PRINT:PRINTX$
350 PRINT"PHONE:":INPUT#1,PH$(N):PRINT:PRINTX$
360 FORTM=0TO1000:NEXTTN:GOTO130
370 REM**VIEW DATA**
380 FORN=0TO170:PRINT"NAME:":NA$(N):PRINTX$
390 PRINT"STREET:":STT$(N):PRINTX$
400 PRINT"DISTRICT:":LC$(N):PRINTX$
410 PRINT"TOWN:":TW$(N):PRINTX$
420 PRINT"COUNTY:":CN$(N):PRINTX$
430 PRINT"P.CODE:":PC$(N):PRINTX$
440 PRINT"PHONE:":PH$(N):PRINTX$
450 FORTM=0TO250
460 GETA$:IFA$="":THEN130
470 IFNA$(N+1)=""THEN460
480 NEXTTN,N:GOTO130
490 REM**FIND**
500 PRINT"NAME:":INPUT#1,NM$
510 FORN=0TO170:IFNA$(N)=NM$THEN530
520 NEXTN:GOTO760
530 PRINT"NAME:":NA$(N):PRINTX$:PRINT"STREET:":STT$(N):PRINTX$
540 PRINT"DISTRICT:":LC$(N):PRINTX$:PRINT"TOWN:":TW$(N):PRINTX$
550 PRINT"COUNTY:":CN$(N):PRINTX$:PRINT"P.CODE:":PC$(N):PRINTX$
555 PRINT"PHONE:":PH$(N):PRINTX$
560 FORQ=1TO500:NEXTQN
570 GETA$:IFA$="":THEN130
580 IFFL=1:THEN RETURN
590 GOTO570
600 REM**HELP**
610 PRINT"*****1:FIRST NAMES":PRINT"*****2:SECOND NAMES"
620 PRINT"*****":INPUT#1,ONA:GOTO640,710
630 GOTO 610
640 REM**1ST NMS**
650 PRINT"1ST NAMES:":INPUT#1,NM$
660 A=LEN(NM$)
670 FORQ=0TO170:IFNM$=LEFT$(NA$(Q),A)THENFL=1:N=Q:GOSUB530
680 GETA$:IFA$="":THEN 130
690 NEXT Q:IFFL=1 THENFL=0:GOTO130
700 FL=0:GOTO760
710 REM**2ND NMS**
720 PRINT"2ND NAME:":INPUT#1,NM$:A=LEN(NM$)
730 FORQ=0TO170:IFNM$=RIGHT$(NA$(Q),A) THENFL=1:GOTO530
740 GETA$:IFA$="":THEN130
750 NEXTQ:IFFL=1 THENFL=0:GOTO130
760 REM**NON FOD**
770 PRINT"*****SORRY*****"
780 FORTM=0TO1000:NEXT TN:GOTO 130
790 A$=CN$(N):CN$(N)=CN$(N+1):CN$(N+1)=A$
800 A$=PC$(N):PC$(N)=PC$(N+1):PC$(N+1)=A$
810 REM**FILE OUT**
820 PRINT"SET TAPE TO THE RIGHT POSITION":PRINT"PRESS SPACE BAR"
830 GETA$:IFA$="":THEN830
840 CLOSE:OPEN1,1,0,"DATA BASE"
850 FORN=0TO170:IFNA$(N)=""THEN880
860 PRINT#1,NA$(N):PRINT#1,STT$(N):PRINT#1,LC$(N):PRINT#1,TW$(N)
870 PRINT#1,CN$(N):PRINT#1,PC$(N):PRINT#1,PH$(N)
880 NEXTN:CLOSE:OPEN1,0:GOTO130
890 REM**FILE IN**
900 PRINT"SET TAPE TO THE RIGHT POSITION":PRINT"PRESS SPACE BAR"
910 GETA$:IFA$="":THEN910
920 CLOSE:OPEN1,1,0,"DATA BASE"
930 FORN=0TO170:INPUT#1,NA$(N):INPUT#1,STT$(N):INPUT#1,LC$(N)
940 INPUT#1,TW$(N):INPUT#1,CN$(N):INPUT#1,PC$(N):INPUT#1,PH$(N)
950 IFT=0 THEN NEXT N
960 CLOSE:OPEN1,0:GOTO130
970 REM**UPDATA**
980 PRINT"NAME:":INPUT#1,NM$
990 FORN=0TO170:IFNM$=NA$(N) THEN290
1000 NEXTN:GOTO760
1010 END

```



USING THIS Address Book for the Vic-20 it is possible to store 170 names and addresses within 16K memory expansion.

The menu gives options of entering new names and addresses and viewing the data stored by typing in the full name of the person. Data can be loaded and saved using cassette and pressing M will enable you to return to the menu.

Address Book will run on an 8K Vic-20 with limited storage capacity. It was submitted by Patrick Ying of the South Chadderton Computer Club.

In line 140 and 770 substitute Inverse £ for \$ where underlined.



HI! I'M BRAINY and I really rate computers. I'm in Load Runner every issue so write to me at 196-200 Balls Pond Road, London N1 4AQ and I'll do my best to answer any questions you have.

Remember, Brainy's the name and, by the way, I will pay £1 to anyone whose name is mentioned. Write away!

BRAINY'S BRAINBOX

Spot the difference

WHAT IS the difference between a video games machine like the Atari and a computer like the Spectrum?

*Stephen Toos,
Newport Pagnell, Bucks.*

THE ATARI home video centre is only for playing games. The Spectrum, however, being a computer, enables you to write your own programs and games. Tapes are less expensive and more of your friends are likely to have them, so you can exchange tapes with them. You can do all kinds of things with a computer which you could not even attempt with a video-games machine.

* * *

Micros—just another craze?

HOW CAN I convince my parents to let me buy a computer when they think it is just another electronic game of which I will soon grow tired? When and if my parents let me buy one, would you recommend the Commodore Vic-20 as a good all-round computer for playing arcade games and learning school subjects?

Stephen Dunne, Dublin.

YOU CAN assure your parents a

computer is not just another electronic game, because you can use it educationally, such as for helping with revision, as well as for playing games and writing programs.

The Vic-20 is one of the top computers and has plenty of good software and books about it. It is also inexpensive but it has only a small memory and uses only capital letters. It is, however, a good, popular computer, with plenty of reasonably inexpensive games and learning software.

* * *

Talk about computer talk

MY DAD says computers are better than people. I told him that they cannot hear and speak but he said they could. That is not true, is it?

Lucy Martyn, Poole, Dorset.

YOUR FATHER is correct. You can buy special attachments for many computers which enable them to say certain words, usually with a strong American accent, and you can even get them for the Spectrum. The Apple and some bigger computers can be programmed to recognise certain words—usually up to about 100—spoken by certain people, so they can be said to hear and speak. They cannot see, though, if that is any consolation. And I think I prefer people.

Using GOTO statements

I HAVE easy access to a BBC Micro Model B and in my programs I often use the GOTO statement. In the *BBC Micro User Guide* it says that using the GOTO statement is bad practice and you should use a 'REPEAT...UNTIL' loop instead. Please could you tell me how to use a REPEAT...UNTIL loop instead of the GOTO statement?

Conor Quinn, Belfast.

YOU CANNOT replace all GOTOs with REPEAT...UNTIL loops but the ones you can occur when you have to type in the correct reply or answer. For instance, you might have this program:

```
20 INPUT reply
30 IF reply=5 THEN GOTO 50
40 GOTO 20
50 PRINT "Good!"
```

That is perfectly satisfactory but if you did that all over a big program, you would find it difficult to read the program and would have difficulties if something went wrong. Instead you could type:

```
20 REPEAT: INPUT reply
30 UNTIL reply=5
40 PRINT "Good!"
```

That is much easier to debug, alter and understand.

* * *

What is the TRS-80?

I HAVE seen a computer called the TRS-80. I have asked if it is a good computer but none of those I asked has heard of it. I wonder if you could tell me if it is worth buying?

*Shaun Gee,
Shirecliffe, Sheffield.*

THE OLD, black-and-white version of it has recently been replaced by the Tandy TRS-80 colour computer. It has fairly good Basic and a reasonable range of software for it. I think it can use the software for the old TRS-80, too.

It is expensive, about £240, but you could probably buy a much cheaper second-hand model by looking through advertisements in computer magazines. You should ask to try it in shops or at computer fairs before deciding to buy.

TRUMBULL'S WORLD

THE TWO CHILDREN OF PROGRAMMER TRUMBULL ARE SEARCHING THEIR FATHER'S COMPUTER CREATED ADVENTURE WORLD FOR THE MISSING FRAGMENTS OF A MYSTERIOUS CLASP. HARD ON THEIR HEELS ARE THE SINISTER SIMIAN AND THE VICIOUS HUNTER.

AS THEY REST, THE GAME PRESENTS A STRANGE MESSAGE.

WHAT DOES THAT MEAN?

BUFFER OPEN.
PARAMETER
27588769
OCCURRING.
DIAGNOSTICS
NOW ACTIVE.

OK,
BUT WHAT
DOES IT ALL
MEAN?

I'LL
ASK.

3765986
CODE LINES
CHANGED.
GAME PARAMETERS
ALTERED.

help
THERE ARE
STRANGERS
IN THE
SYSTEM.

LET'S
GET OUT OF
HERE...

BEHIND THEM AND GETTING CLOSER...

WHICH
WAY?

OVER
WATER. OOH...
I CAN SMELL
THEM!

JAN TAKES OUT THE CLASP.

MARC, IT FEELS AS
IF SOMETHING'S
TUGGING IT!

WHICH
WAY? OVER
THERE?

FOLLOWING THE CLASP
BRINGS THEM TO...

IT'S
BEAUTIFUL!

C'MON,
DOWN
HERE.

SCRIPT:
ROB BEATTIE
ARTWORK:
MALCOLM STOKES
LETTERS:
STEVE POTTER

JAN IS NOT SO QUICKLY CONVINCED.

SEE? C'MON,
IT LOOKS GREAT
DOWN THERE.

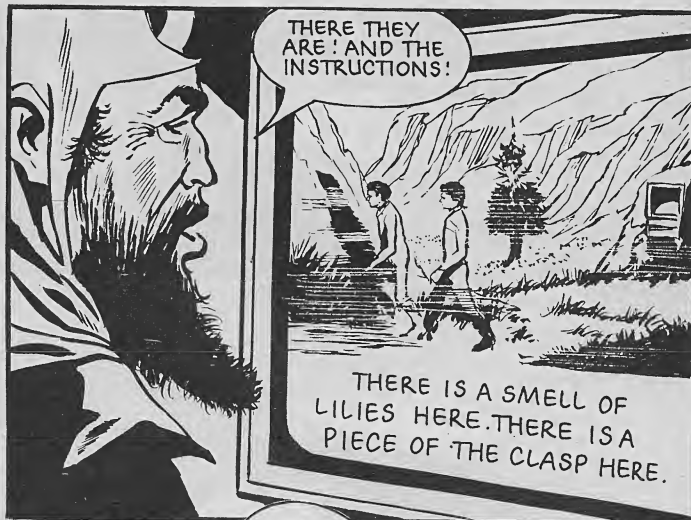
watch
BELOW IS SUMMERVALE-
THE CROOKED STAFF
IS HERE. THE TREE IS
HERE. THERE IS A
SMELL OF LILIES HERE.
THERE IS A PIECE OF
THE CLASP HERE.

BEHIND, ON THE ISLAND,
SIMIAN WORKS WITH
TERRIBLE SPEED.

THERE, THE PATCH
IS COMPLETE. NOW
WE WILL SEE WHAT
THEY SEE.



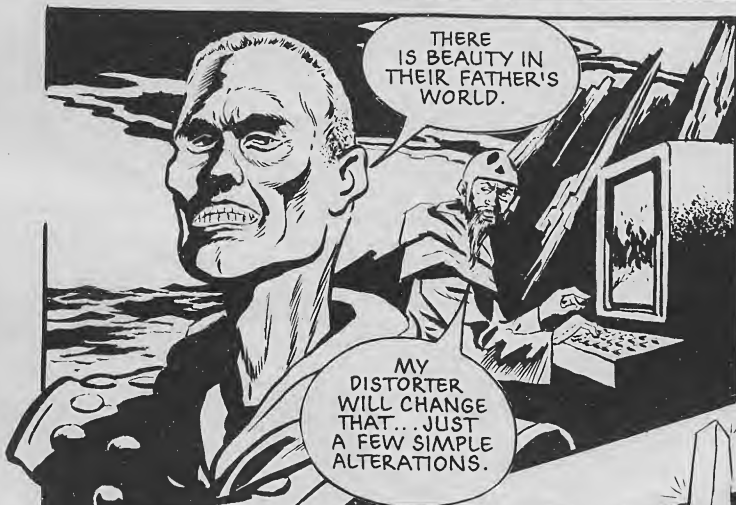
THERE THEY
ARE! AND THE
INSTRUCTIONS!



THERE IS A SMELL OF
LILIES HERE. THERE IS A
PIECE OF THE CLASP HERE.

THERE
IS BEAUTY IN
THEIR FATHER'S
WORLD.

MY
DISTORTER
WILL CHANGE
THAT... JUST
A FEW SIMPLE
ALTERATIONS.



THEY
SCAMPER
DOWN...

I'M
SURE I
CAN SMELL
THOSE
FLOWERS!

RACE
YOU!

... DOWN...



DOWN INTO A
SEA OF WOLVES
AND A TOWER
OF ICE!

SEE HOW
MY POWER
GROWS!!



LIKE DARK WATER, THE WOLVES SWIRL AROUND THE FOOT OF THE TOWER.



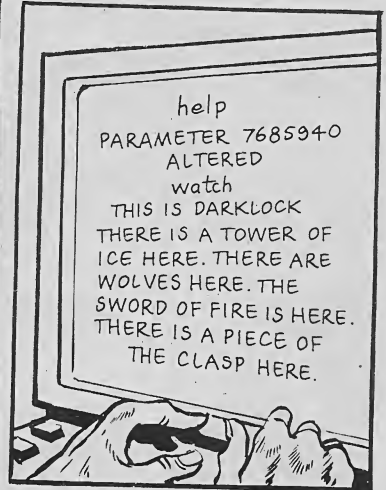
OH MY GOD...

EVERYTHING'S CHANGED!



help

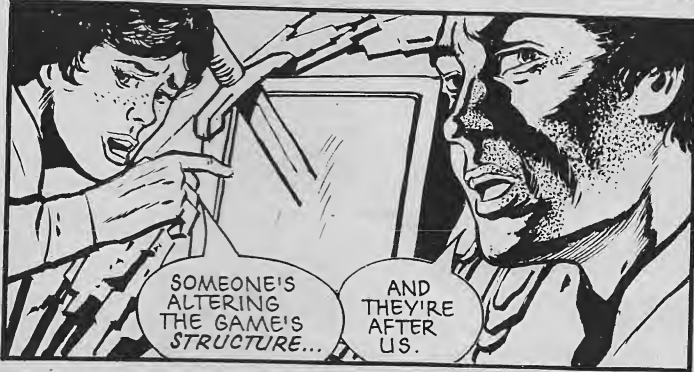
PARAMETER 7685940
ALTERED
wath
THIS IS DARKLOCK
THERE IS A TOWER OF
ICE HERE. THERE ARE
WOLVES HERE. THE
SWORD OF FIRE IS HERE.
THERE IS A PIECE OF
THE CLASP HERE.



MARC INSTRUCTS THE GAME AND MOVES INTO ACTION...

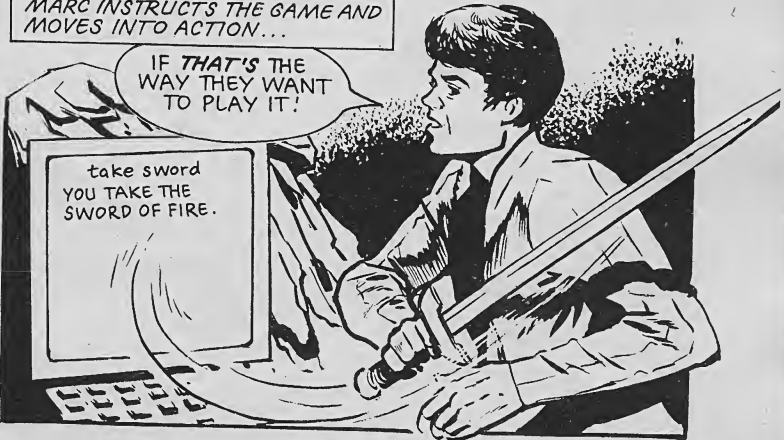
IF THAT'S THE WAY THEY WANT TO PLAY IT!

take sword
YOU TAKE THE
SWORD OF FIRE.



SOMEONE'S ALTERING THE GAME'S STRUCTURE...

AND THEY'RE AFTER US.



FOLLOW ME!

NO... WAIT!



IT'S WORKING!



AT THE FOOT OF THE TOWER...

NOW LET'S GET UP THIS TOWER!



AND BACK AT THE BARROW.



MARC GOUGES INTO THE TOWER.



JUST A FEW MORE INCHES...

A DARK SPECK IN A DARKENING SKY...

JAN, GET READY TO TAKE IT!



NOOO!!

A SCREAMING COMES OUT OF THE SKY...

MARC IS TAKEN!



OOOWWW!!



...AND JAN IS LEFT.

NEXT: THE HANDS OF THE HUNTER.

2
for
players
**SUPER
DOGFIGHT**



Duelling air aces

THE BATTLE rages over the fields of France. You are in your biplane and a German pilot is attacking you with machine-gun fire.

Dog Fight, for the Commodore 64, re-enacts one of those timeless duels of the First World War. It is not a visually-exciting re-enactment as little happens on the computer screen. There are two aircraft crossing the screen at odd angles firing machine-gun bursts but there is little to make it a game to appeal to the real arcade enthusiast.

The game is for two players and the computer acts only as a moderator, scoring every time you or your partner scores a hit. One player can use the game by setting one aircraft on a course and bombing it with the other.

The aircraft can be moved using two joysticks, or one joystick and the keyboard. That means one of the aircraft has to be controlled with a joystick all the time.

Despite the rough edges of the game the fast action, sprite graphics and the realistic sound effects provide some entertainment. *Dog Fight* can be obtained from Terminal Software and costs £9.95.

Fun, 6; addictive, 5; graphics, 7.

Jumping Jets!

THE FALKLANDS war gave a new lease of life to games concepts on popular microcomputers. The latest in this vein is *Harrier Attack*, which runs on the 16K Spectrum and Oric. The objective is to take off from your aircraft carrier, evade the strafing runs of the enemy aircraft which come to meet you and reach the island.

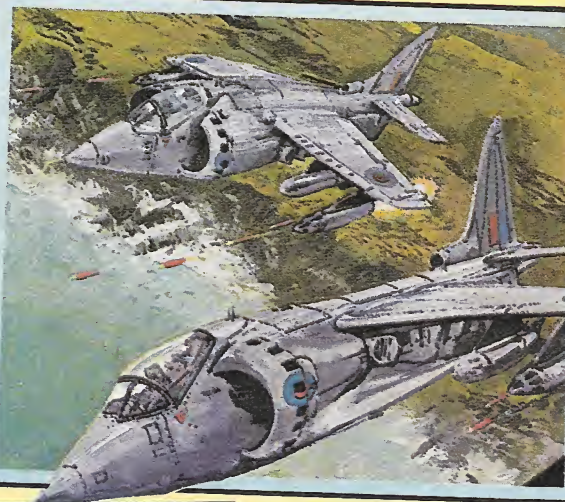
The Harriers being jump-jets, it means they can take-off vertically instead of the usual steady climb of most aircraft.

To get anywhere near the island calls for a good deal of persistence. When you start playing, the enemy attack quickly and your aircraft will either be destroyed by their cunning or in a collision with an attacker.

Both versions are surprisingly alike, although that for the Oric has the slight advantage of arcade-quality graphics.

Harrier Attack can be obtained from Durell Software and costs £6.95 for the Oric and £5.50 for the Spectrum.

Fun, 8; addictive, 8; graphics, 8.



Digger Dan

DIAMONDS is similar to the arcade game *Dig Dug* and introduces us to *Digger Dan*, a prospector mining for the Great White Diamond. Unfortunately for Dan, on the way to the diamond field he has upset some of the locals.

There are 16 levels in the game, each with four screens. The first level is fairly easy but as the game progresses the levels become almost impossible to complete. The aim is to collect the small clusters of diamonds scattered around the screen while being pursued by various menaces.

On the first four screens Dan must collect the diamonds while being chased by Brian the Blob, who can be crushed under the various rocks scattered around. Dan also has Philip the Filler, the Fireflies, Simon the Snake and the Eyes to contend with, and if he takes too long to clear a screen of diamonds the Demon appears and he doesn't need tunnels to pursue Dan.

Although there are 16 levels the only real variations are in the position of brick walls under the ground which make the collection of the diamonds more hazardous.

The first person to complete all 16 levels wins the *Digger Dan* Diamond Trophy but to attain that standard will take a good deal of skill as no extra lives are awarded for high scores.

Diamonds runs on an Atari 400/800 and is available from the English Software Co at a cost of £14.95.

Fun, 7; addictive, 7; graphics, 6.

Horrific adventure

RESCUING the princess from the castle of an evil magician or king is a standard plot for adventure games. The plot of *Horror Castle*, for the Dragon 32, is old and standard with more creaks in it than in the mouldy floors of the rascal's halls.

The game is machine-coded but it could just as well have been written in Dragon Basic for the extra speed and finish of the final product. The adventure was text only, with no graphics or even a bleep of a sound effect.

The manufacturer could surely have thought of a better plot, even if it still took place in a castle, and a little more care might have been put into realising the potential of this good machine.

Horror Castle can be obtained from A and F Software. It costs £11.

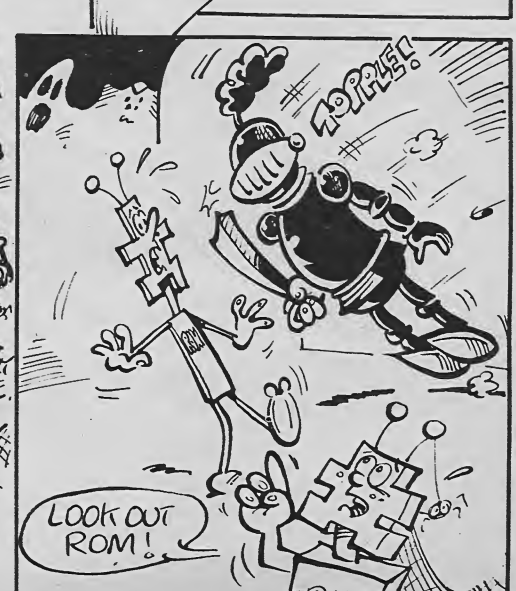
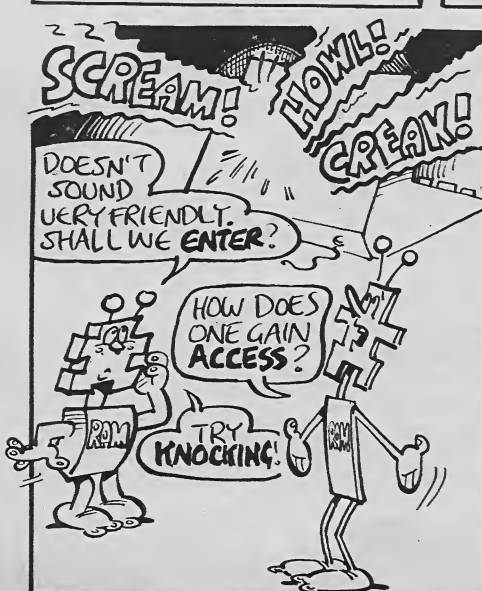
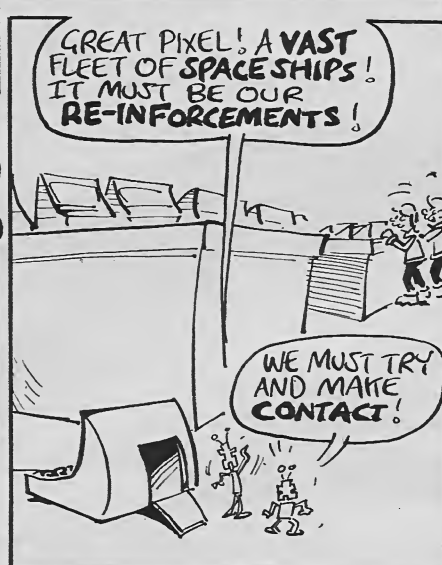
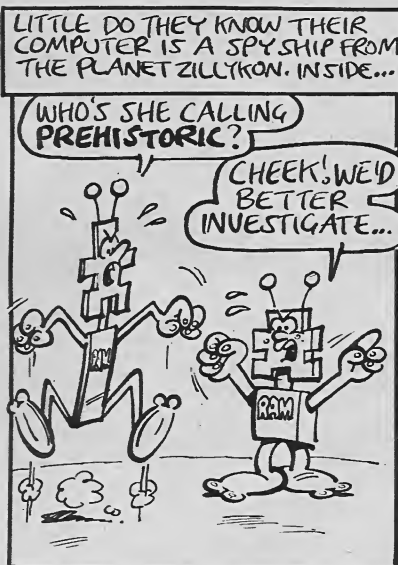
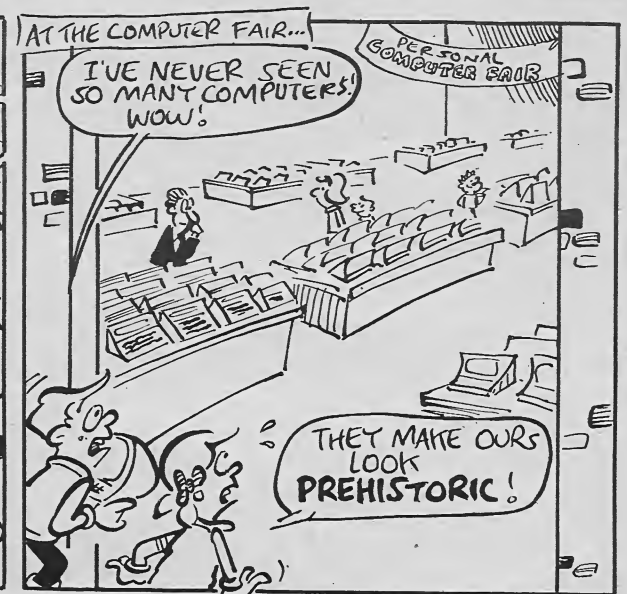
Fun, 3; addictive, 2; graphics, 1.

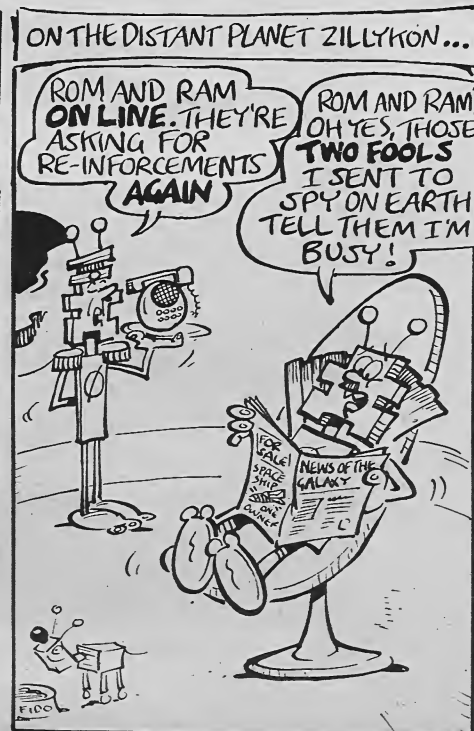
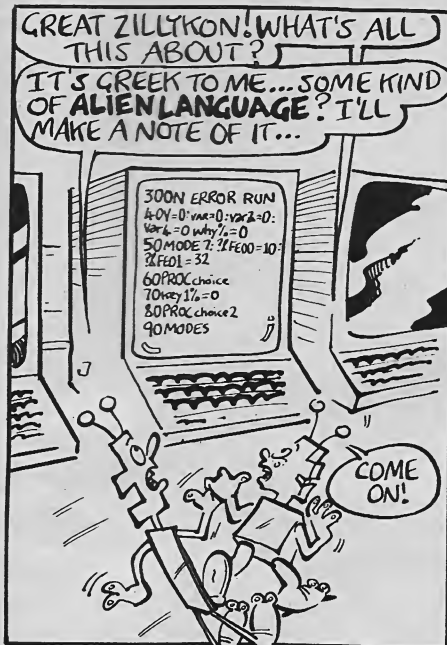
DIAMONDS



ENGLISH
SOFTWARE
FOR ATARI HOME COMPUTERS

THE ADVENTURES OF ROM AND RAM





SCRAMBLE

BY 1980, the arcades were literally being invaded by dozens of new games, one of them Scramble by Stern Electronics. The game was popular from the beginning, because of its good graphics. Unlike most of its counterparts, it featured a scrolling landscape making the game seem more realistic.

Scramble was one of the first games to feature such things as fuel gauges and numerous alien terrains, making things slightly more complex for the novice player.

You control a spacecraft which can be made to move up and down or back and forth above the alien landscape which scrolls from right to left and is, of course, deadly to the touch. You must also keep a watchful eye on the fuel gauge at the bottom of the screen, which must be replenished by destroying the alien fuel dumps located at various positions along the planet's surface.

During the phase your craft is shot at by ground-to-air missiles and they can be destroyed by your machine-gun fire or bombs, which can be despatched two at a time. There are a number of alien bases dotted among the fuel dumps and they can be picked off for a mystery bonus.

The key to negotiating that part of the game is to manoeuvre close to the surface and shoot everything in your path. As you progress further into the system you are attacked by swarming UFOs and indestructible fireballs. To pass that section it is advisable to hug the surface and dodge the fireballs, keeping a watchful eye on your ever-decreasing fuel supply.

The game has six phases, including a mothership or base with which you must dock at the end of the system. In the event of a player achieving that, the game will restart on a slightly faster level. It takes a very skilled player to reach that standard.

Vic Skramble by Terminal Software is also a faithful version, with clear graphics for the 3.5K machine.

Ratings:

Airstrike	8
Gauntlet	8
Penetrator	9
Skramble	7

Software

THE ENGLISH Software Co produces the best version of Scramble for the Atari micros, called Airstrike and it is a very good copy of the arcade game.

Colourmatic markets a ZX-81 scramble, Gauntlet, for the 16K machine. That, too, features six phases and is another excellent copy.

Penetrator is the best scramble-type game for the 48K Spectrum and is from Melbourne House.



Providing processor power to The Controller in publishing Load Runner were Bill Scolding (editor), David Hogan (advertisement manager) and June Mortimer (administration). Chris Winch, Harold Mayes MBE, Terry Cartwright and Richard Hease linked into the system. The corporate might of ECC Publications of 196-200 Balls Pond Road, London N1 4AQ was utilised continually. Printout by Cradley Print PLC, Warley, West Midlands. Distributed by Spotlight Magazine Distribution Limited, 01-607 6411. ISSN 0264-8369. © 1983 Load Runner.